



The Respirator.

A New Apparatus for the Resuscitation of Patients.

By DR. H. E. TOMPKINS, New York.

In the practice of dentistry there are times when a knowledge of artificial respiration becomes a necessity. Usually, it is at that time that most men "lose their heads," as it is said. The desire to do something is paramount. That very desire may lead us to do that which is useless in many cases.

The great impetus given the administration of gas-oxygen of late led me to devise an apparatus for the resuscitation of patients who had suffered a respiratory collapse or even a cardiac collapse. To that apparatus I have arbitrarily given the name the "Respirator."

The purpose of the apparatus is to produce resuscitation by means of enforced artificial respiration, in the simplest manner possible and by the use of air.

Artificial respiration has been produced for centuries by the expansion and contraction of the thoracic cavity by stretching the musculature of that region. The methods accepted as best, until recently, are the Sylvester, Schafer, and Howard.

These methods, while they are and have been truly wonderful in results, are woefully lacking in positiveness. If any rigor of the chest

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walls be present the methods are ineffective, but if conditions are right they can and will produce a semblance of respiration which may be productive of good results.

Enforced Respiration.

Let us consider for a moment the means by which the movements of the arms or musculature produce respiration.

The lungs depend, in the chest cavity, from the trachea much the same as a chandelier hangs from the ceiling. The lung tissue itself is in no way connected to the chest walls except by the pleuræ.

When the chest walls are raised by drawing up the arms, the cavity is made larger and allows the lungs to receive air because of a partial vacuum. If this vacuum is not created in the lungs themselves, very little, if any, air can enter. Even if a vacuum is produced, only a small quantity of air will find its way into the lungs. To remove this air, pressure is applied to the chest and after an interval the movements are repeated, a certain number of times per minute.

The Pulmotor.

A consideration of the late method of artificial respiration produced by the pulmotor shows that a true respiration takes place. Oxygen is forced into the lungs under pressure and is afterward sucked out. This alternate movement is productive of an automatic institution of respiration.

The pulmotor, however, has its limitations and objections. First, the apparatus is too heavy and cumbersome for one man to handle or carry with him. Second, none but Drager cylinders, fitted with Drager valves, can be used on the apparatus, thus precluding the possibility of using oxygen in any cylinder that may be handy. Third, when the pressure of oxygen in the cylinder goes below about seventy to seventy-five pounds per square inch, the apparatus will not work and operations must then be stopped until a new cylinder can be put in place. Fourth, the oxygen cylinders must be returned to the Drager Co., for refilling or sent to but one other firm, of which I know, namely, the Standard Oxygen Co., of New York. (I understand that no other oxygen maker in the United States has facilities for refilling these cylinders.) Fifth, the initial expense of the machine is great and the cost of operation is excessive; it averages about \$6 to \$8 per hour to operate. Sixth, and finally, is the use of pure oxygen to produce respiration.

Effects of Oxygen.

While oxygen is the life-giving substance of the universe, it is at the same time a live-destroyer, as I shall point out later.

Oxygen to the extent of about 8 per cent. is

required by the normal being to properly oxygenate the blood and so to sustain life. A quantity in excess of that is practically useless because it produces a slowing of respiration; the human mechanism automatically takes from the air the necessary quantity of oxygen by regulating the number of respirations demanded by the presence or absence of oxygen in the air respired.

The slowing of respiration is due not so much to the excess of oxygen as to the diminished quantity of carbon dioxid in the blood, which condition is brought about by the excessive washing and oxygenation which removes by force practically all traces of the carbon dioxid and substitutes oxygen therefor.

At first glance the removal of the carbon dioxid may seem beneficial. It may be thought that this is the desired end. If you are of this opinion, permit me to ask: Why do we breathe?

Doubtless many of you remember that this question was well argued by the profession a few years ago. Numberless theories were advanced of which but one stood the test. The final conclusion was, in substance: Respiration is due to the irritation of the respiratory center of the brain by the carbon dioxid content of the blood.

This conclusion is, indeed, a fact as can be readily demonstrated by the inhalation of a mixture of carbon dioxid and air.

The blood under normal circumstances has a content of from 2 to 4 per cent. of carbon dioxid which is quite enough to carry on normal respiration. To remove that gas and to allow its place to be taken by oxygen, you can readily see, would produce a condition of acapnia or a cessation of respiration.

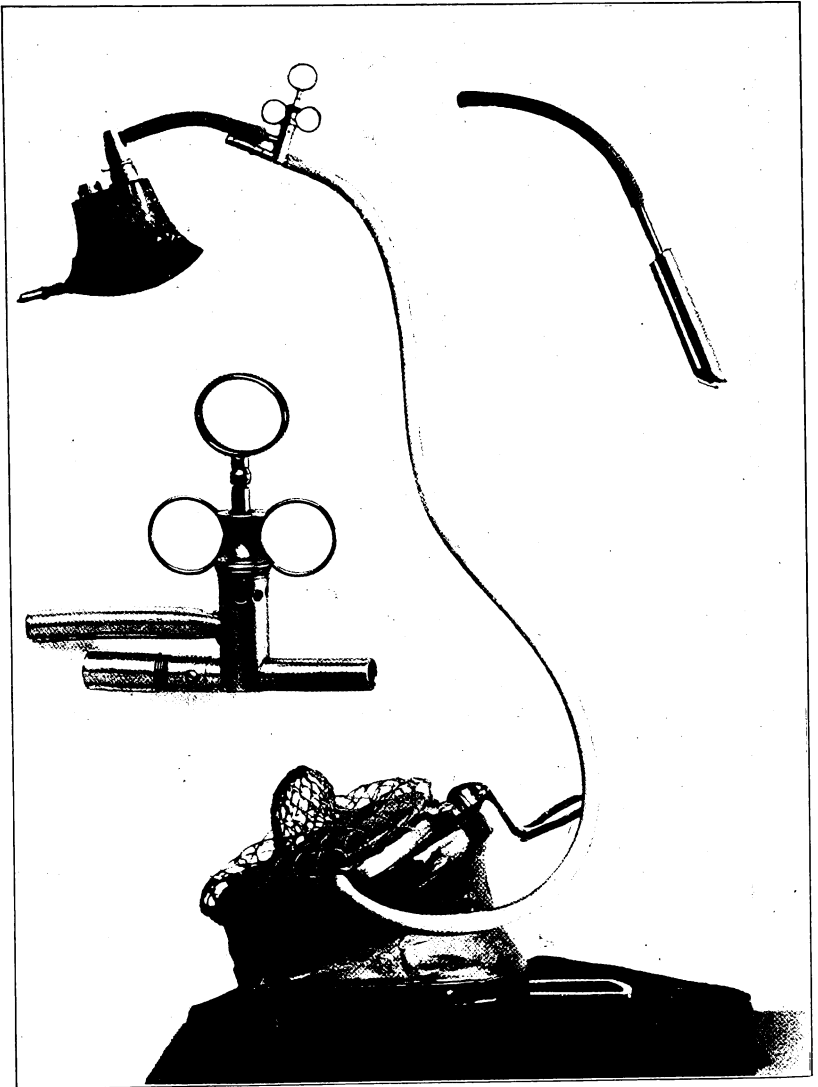
If this be so, is it proper to administer a full percentage of oxygen for the production of artificial respiration?

As I have said, the required proportion of oxygen is about 8 per cent. The atmospheric air contains about 20 per cent. oxygen, traces (to the extent of nearly 1 per cent.) of carbon dioxid, the balance of the mixture being mainly nitrogen.

Would it not be better, then, to substitute for the oxygen just plain air from which the requisite quantity of oxygen may be taken, and if the necessary quantity of oxygen cannot be obtained from the air at normal number of respirations per minute, is it not possible to increase the number of respirations and so wash the blood more frequently and thus attain the desired end? Is it not better to use the air, the natural medium, if for no other reason than for its content of carbon dioxid which by its property of causing respiration will institute that function with less shock to the organism?

After a consideration of the objections and disadvantages of the

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A.—Safety valve on which is an index showing the pressure of air or gas allowed to enter the lungs.

B.—Ports through which the air is allowed to escape from the lungs on deflating.

C.—Piston controlling the passage of air into or out of the lungs, depending upon whether the piston is up or down.

D.—Lugs or bars to which the straps for attaching the mask to the face are fastened.

E.—Pharyngeal tube, to be used if the mask is inoperative or not applicable.

pulmotor I started to evolve an apparatus that would embody as few of those disadvantages as possible.

The apparatus shown is the result of that study

The Respirator. and many experiments. Its advantages may be enunierated:

It is not cumbersome and heavy, in fact, it can be carried in a small case and weighs less than ten pounds. It does not depend upon any brand of oxygen nor does its operation depend upon compressed gas. It is operated by hand and foot in the least tiring manner; both hand and foot can be changed without losing time or causing trouble. Its apparent initial cost is low and it has no cost of up-keep. Finally, it uses air.

If it is desired, oxygen may be used, or a combination of oxygen with a definite percentage of carbon dioxid may be employed, but my own experience suggests the use of atmospheric air, of which there is always a plentiful supply.

**Method of
Using the
Respirator.**

The technic follows: With the patient lying down, the shoulders are raised by means of a pad so that the head falls well back. The mouth is opened and a prop or gag is placed between the jaws. False teeth or other loose articles are removed from the mouth. Grasp the tongue and draw it—yes—strain it well forward, pulling it as far as it will come. Pass the finger down the throat and swab out any mucuous that may be present and draw the epiglottis against the base of the tongue. Holding the tongue well forward, the mask is adapted to the face, with the tongue between the mask and the chin and held firmly in place by a piece of gauze, strap the mask to the face; it must be *very* tight so that no air may leak in nor out.

These details being observed, the mask is connected to the valve mechanism by a piece of rubber tubing from eight to twelve inches long. The valve mechanism is connected by more tubing to a pump or bellows of some description. The bellows used is the best I have been able to find thus far.. I would, however, prefer a much smaller pump, but up to date I have been unable to find one.

All connections being well made and tight, the bellows is pumped and air is forced along the tubing through the valves into the lungs. By pressing on the valve stem, the air in the lungs is forced out into the atmosphere by the elasticity of the lung tissue. The valve stem is allowed to rise and air is again admitted to the lungs. The raising and lowering of the valve stem controls the number of respirations allowed per minute.

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On the valve mechanism is found a safety valve which controls the pressure of air. When the pressure of air in the lungs reaches a predetermined point, as set for on the index, this valve allows the excess air to pass into the atmosphere and thus keeps the pressure down to where it can do no harm.

This is all there is to the machine.

For demonstration purposes, I use the pharyngeal tubes which are placed with all of the precautions observed in fitting the mask. With the tongue well forward and the epiglottis raised a tube that is slightly larger than the pharyngeal opening is passed down so the beveled end of the tube comes opposite the glottis or laryngeal opening. Held firmly in place, with the tongue well forward the jaw is brought up against the tube and made fast, in some manner. The final precaution is to keep the air from the stomach and intestines. This may be done by either of two methods, both of which are effective.

First, by pressure on the upper abdomen by placing a weighted pad thereon or by pressing upon it, or, second, by pressing upon the cricoid cartilage, thus compressing the soft œsophagus between the cartilage and the spine.

Cases Wherein Respirator May be Helpful.

It is noteworthy that the apparatus is applicable in all cases in which the respiration is affected. The following is but suggestive of the cases in which the "Respirator" may be of assistance.

Poisoning: By aconite and its derivatives; alcohol, acetanilic preparations, acids and acid fumes (nitric, moriatic, etc.); amyl nitrite, benzine, belladonna and its derivatives; carbolic acid and similar drugs; chloral, chloroform, cocaine and its analogues; conium (hemlock); chlorates, chlorine, curare, carbon dioxid, carbon monoxid, carbon disulphide, ether, gelseminum, hydrocyanic acid and the cyanides; hyoscyamus; gases, acetylene, coal, marsh, pit illuminating, etc.; nitrous oxid, nitro benzene (oil mirbane); nitrates, opium and other opiates; physostigma, petroleum products; snake bite; staphisagia and larkspur; sulphuretted hydrogen; strychnine and similar drugs; sulfonal, trional, veronal, veratrin,¹ etc.

Drowning, electrical shock, anesthesia, obsteterics, injuries affecting respiration and all cases demanding artificial respiration.

What the apparatus will do is a delicate question. With it I have succeeded in causing the heart to beat in animals that have been dead, or to put it differently, whose hearts have ceased beating for as long as twenty-three minutes. This occurred in but one case out of 163 experiments. I have instituted the heart's action in several cases in which

the heart had not pulsed for periods as long as five minutes. The number of these cases approximates about 7 to 10 per cent.

I do not wish to be understood as saying or claiming that this apparatus will raise the dead, but it will positively raise the dying to life if respiration can do it. The machine cannot do the impossible. It cannot do more than respiration can accomplish and that is all I claim for it. If by its use, a life is saved; if the human heart's action be instituted after it has ceased, then it will have accomplished all that I, in my wildest imaginations, even dreamed. That would add glory to the apparatus, but it would be an honor which was not sought—for the prime intention in building this apparatus was to induce respiration—thus to save the lives of some unfortunates who if left alone, or, who if worked over by the older methods, would have died.

To me, even yet, after my association with the machine and the numerous experiments I have conducted, the apparatus appeals as a most wonderful thing. It makes me feel that there must be a Deity to whom I should bow. It impresses me most with a substantiation of my one belief in religious matters, of the omnipotence of that Supreme Ruler whose laws, when known, are found to be the simplest, and yet, most wonderful.

Suggestions on Dental Jurisprudence.

By HENRY SCHWAMM, D.D.S., LL.B., of the New York Bar.

The increasing number of actions against dentists and the large amounts of damages obtained against them (one judgment recently awarded by a jury against a dentist for alleged malpractice was for \$16,000) should serve as a warning to the members of the profession that the time has come when dental jurisprudence should be incorporated in the dental curriculum.

In our societies and journals we often notice subjects discussed which have only a remote and sometimes no relation at all to dentistry proper, while this important and instructive subject is ignored. It is true that cases in which dental and legal questions overlap are accidental and comparatively few. But it is a safe guess that there are at least as many as there are cases of fractured mandibles. The fact that dental-legal questions occur accidentally is an excellent reason why a dentist should

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be prepared for them. Dentists who possess an elementary knowledge of the law can discuss and apply dental jurisprudence to much better advantage than professional lawyers. A very able lawyer has recently written a book on the subject, which contains many good quotations from adjudicated cases, but some of his own dicta consist of vague and improper propositions. For example, he states: "Though under the rule in most States a contract to furnish a set of teeth out of a stock of teeth in hand would not be binding unless in writing; and in many States a contract to adapt a set of teeth already made, although considerable work was necessary in the adaptation, would need to be in writing to render the contract valid" (Mikell's "Dental Jurisprudence," p. 42). Two-thirds of that book are taken up with a reprint of the statutes of the various States and England. These statutes without annotations do not deserve space in a book of this nature. A much better "vintage" of these statutes may be found in the *Dental Register*. Whenever one is interested in such a statute, it is always advisable to get one which is up-to-date. This can very easily be obtained from a law publishing house or from the Secretary of the State Dental Society.

An interest in dental jurisprudence by the members of the profession would not only prevent injustice to individuals and injuries to reputations, but dentists would be better equipped for the supervision of the legal status of dentistry, to propagate legislative enactments and to effectively prevent sinister methods of practice.

Interesting Case from Practice.

This article was suggested to the writer by the following case, in which he was consulted by the defense: A woman of about forty years came to the office of a young dentist practicing on the upper East Side to have a tooth extracted. It was a lower right permanent second molar, the crown of which was all gone and the distal root covered with hypertrophied gum tissue. She asked the dentist to give her "fresh gas" and "get the fellow out," for she had been suffering with it several weeks. Gas was administered and the mesial root was removed first; we must presume that the blood coming from this socket and the prop on the other side of the mouth did not make it very easy for the dentist to find the distal root. After searching awhile with the forceps he finally got hold of what he thought was the distal root, but what he really did get out was the impacted, malformed wisdom tooth, which was lying in an almost horizontal position. Overjoyed with his success in removing the most probable cause of "that pain in the ear and all over that side of the face," the dentist showed her the tooth and explained the significance of its

removal. But she took a different view of it and did not think he had a right to "pull" more than she told him to, nor did she believe that that was the real offender. The lawyer's letter which soon followed contained opinions to the same effect and some "information" besides. The case ended in victory for the dentist, because the lawyer for the plaintiff who took the case on a contingency basis soon found out that the dentist was "judgment proof," and therefore dropped the matter. That dentist needs one more "victory" in the same neighborhood and he will have to remove to a location where he is not known.

In looking up the law regarding this action the writer came across a case which he believes to be of great interest to the general surgeons as well as to the dentists.

The decision of the Supreme Court of New Jersey in *Brennan v. Parsonnett* (July, 1912, 83 Atl., 948) goes further than any previous American case in express recognition of a surgeon's discretionary authority under conditions created by the use of anæsthetics in surgery.

**Discretionary
Rights of Surgeons
During Anaesthesia.**

In its discussion of the facts the Court shows in a rational way that the employment of anæsthesia has postponed complete diagnosis in many cases until the patient is unconscious, and in pointing out the implied authority of surgeon, the Court said:

"The conclusion, therefore, to which we are led is that when a person has selected a surgeon to operate upon him, and has appointed no other person to represent him during the period of unconsciousness that constitutes a part of such operation, the law will by implication constitute such surgeon the representative *pro hac vice* of his patient, and will, within the scope to which such implication applies, cast upon him the responsibility of so acting in the interest of his patient that the latter shall receive the full benefit of that professional skill and judgment to which he is legally entitled. Such implication affords no license to the surgeon to operate upon a patient against his will or by subterfuge, or to perform upon him any operation of a sort different from that to which he had consented or that involves risks and results of a kind not contemplated. As to such matters the rule in question submits nothing to the judgment of the surgeon, who, as the implied representative of his patient, can under such implication truly represent him only in so far as he gives to him the benefit of his professional wisdom within the general lines of the curative treatment agreed upon between them, unless, of course, a wider discretion has been accorded to him. Within such general lines, however, much is necessarily left to the good judgment of the operating surgeon; just how much will depend upon the circumstances of the individual case.



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"If the surgeon transcend his implied authority as thus defined, the question of his skill and wisdom is irrelevant, since no amount of professional skill can justify the substitution of the will of the surgeon for that of his patient, but where this is not the case, and where the act done or the decision made in the interest of the patient is fairly within the implied duty and authority of the surgeon, the question for the jury is whether upon the evidence it appears that such professional skill and wisdom as the patient was entitled to receive had been exercised by the surgeon in his behalf, not whether in the opinion of the jury the surgeon had acted wisely or whether the patient had been benefited."

This decision was rendered on an appeal from a judgment in favor of a charity patient, based upon the ground that the surgeon exceeded his authority. The surgeon obtained consent to operate for a rupture on the left groin. After the patient had been anesthetized the surgeon discovered a rupture on the right side of a far more serious nature. The surgeon thereupon operated upon the more serious rupture, intending to operate also upon the other, which he was prevented from doing by the patient's condition under the anæsthetic. The patient, upon being informed that the operation would be completed on the following day, apparently acquiesced, but later declined to go on with the operation and brought this action against the defendant for assault and battery.

Considering this condition of facts, this Court exonerated the surgeon by refusing to take the ground of the lower Court "that the operation that was performed by the defendant was of a different sort from that to which the patient had consented."

"Such a ruling," said the Supreme Court, "would be based upon too narrow a view. The conditions for the cure of which the plaintiff applied to the defendant was rupture. He is therefore presumed to have contemplated all of the risks incident to an operation for such a condition. Now, rupture is simply a protrusion of the intestine. Whether it occurs on the right side or on the left, the intestine is the same, the muscular wall is the same, the operation is the same and its dangers and risks are the same."

This case then stands for the proposition that when no greater degree of risk is involved than was contemplated by the patient when he took the anæsthetic, the surgeon may use his discretionary authority when operating. Of course, he cannot remove an organ without express consent (*Pratt v. Davis*, 224 Ill., 300), but whether the Court would call a tooth an organ is very doubtful. The famous English case in which a surgeon performed double ovariectomy, when operation as to one ovary only had been arranged, is another example of what should not be done.

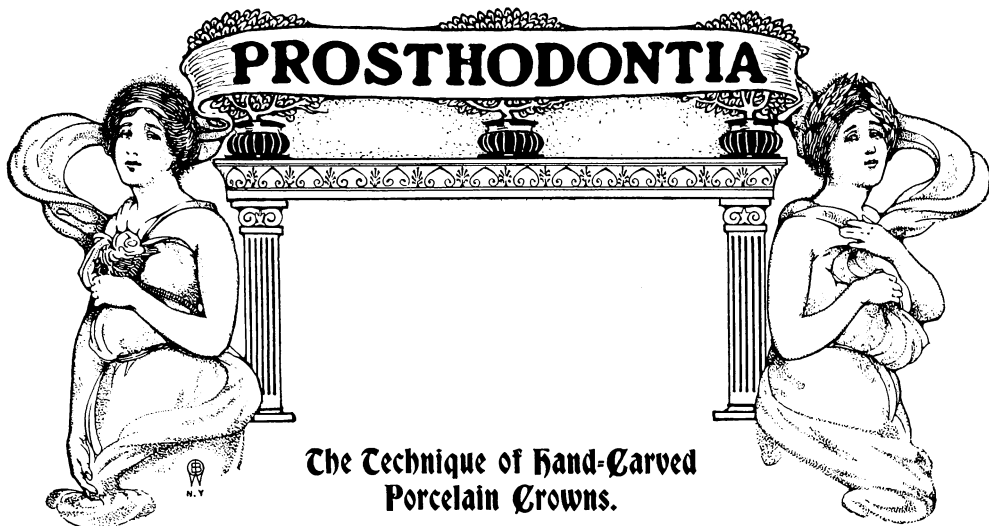
While the recognition by the Court of the surgeon's discretion is a



EXCLUSIVE CONTRIBUTIONS

substantial gain by the latter, it is much safer not to make use of this distinction and to obtain consent of the patient in every case. Cases of this sort invariably rest on questions of fact, and no one can tell what a jury will do with a given set of facts. A judge once asked a citizen for the reason why, whenever the latter was on the jury, the verdict was against the defendant. His answer was, "I always succeed in convincing my fellow jurors that if the defendant was innocent he would not be in court."





By CHAS. K. BUELL, D.D.S., Buffalo, N. Y.

Read before the Second District Dental Society, February, 1913.

It is with considerable temerity that I present to you a crown technic with which you may be more or less familiar, and if it were not for the possible difference in individual methods of porcelain crown construction, and the advantages to be mutually gained by their discussion, I should hardly have been persuaded to bring the subject of hand-carved crowns to your attention.

In order that we may have a clear conception of the progressive steps in the production of the present hand-carved porcelain crown, and note the gradual elimination of defects in the earlier porcelain crowns, a brief review of the history and development of some of these early crowns may answer our purpose.

Early History of Porcelain Crowns.

In reviewing the early history of the porcelain crown, therefore, we find the first published record of the use of porcelain in the year 1816 (Fig. 1). At that time it was called mineral paste, and the pin was baked in the crown, which had an oval form.

The description of this crown, as well as that of the others which have only an historical value at the present time, I am quoting from Dr. Goslee's book.

PROSTHODONTIA

From that time for several years not much progress was made, but about 1840 the English tube teeth were given to the profession (Fig. 2). These were mounted upon the roots with hickory pivots.

The Foster (Fig. 3), Mack (Fig. 4), and Gates-Bonwill (Fig. 5) crowns soon followed, their attachment being made by a screw attached to the root and the crown anchored to the post with amalgam.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.

Then came the Howland-Perry crown with the hole for the reception of the post, not passing entirely through the porcelain, as in the previous crowns. The Logan crown soon followed, and then various forms of attached and detached post crowns, as the Davis, Justi, Whiteside, etc. The difficulty in procuring the desired shape and perfect adaptation to the root, being so difficult to obtain lead the profession to attempt the construction of crowns in the laboratory.

NOTE.—Figs. 1 to 7 are from Dr. Gesler's book.

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The first effort in the laboratory was to obtain better adaptation to the root by the aid of a plate of platinum soldered to a post of iridio-platinum. A facing was selected and the pins soldered to the post with platinum solder (Fig. 6). The lingual contour was then restored by fused porcelain. These crowns having a tendency to fracture, the cap and apron foundation was adopted (Fig. 7). The difficulty co-incident

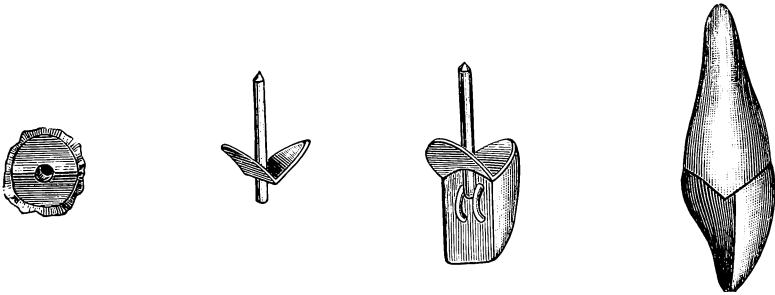


Fig. 6.

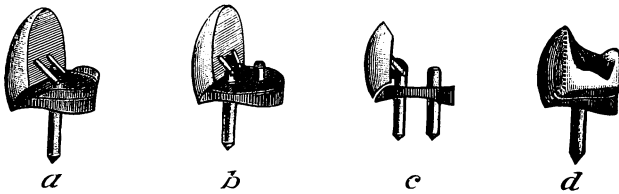


Fig. 7.

to the application of a framework of this kind to a badly brokendown root, and the subsequent irritation to the tissues, caused by the band, led to a desire for a crown that could be made to fit the root, whatever its condition, cause no irritation to the tissues, and at the same time be strong enough to withstand the strain placed upon it during mastication.

Facts Concerning Porcelain.

In the development of this crown the following known facts concerning porcelain were constantly kept in mind:

Porcelain to have its greatest density must be evenly and thoroughly condensed.

All possible moisture must be brought to the surface and absorbed.

A mass of porcelain during the process of baking shrinks toward the center of mass.



Fig. 8.



Fig. 9.

Fig. 8. Facing, with pins soldered and built up with S. S. W. high porcelain.
Note bubbles around pin and post.

Fig. 9. Crown with band. Note bubbles and space near band.

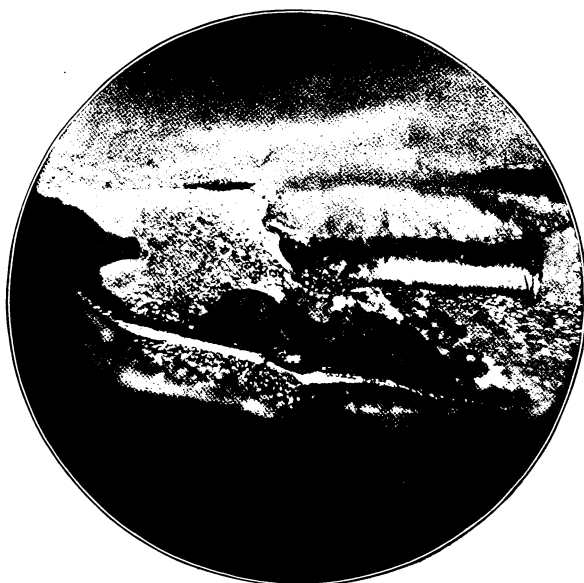


Fig. 10. Same as Fig. 9, higher magnification.

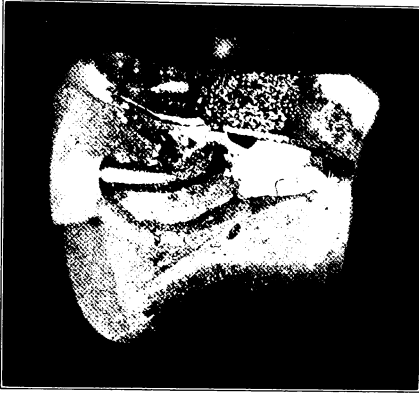


Fig. 11.



Fig. 12.

Fig. 11. Approximal view of same.

Fig. 12. Hand-carved crown. Note density and lack of bubbles.



Fig. 13.

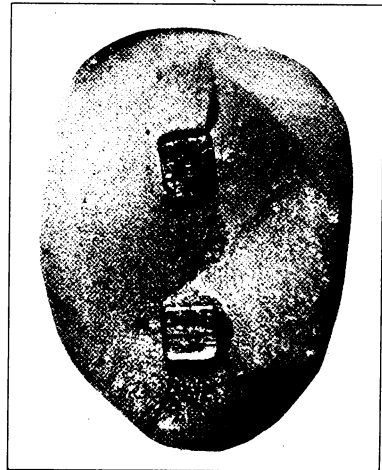


Fig. 15.

Fig. 13. Hand-carved bicuspid. Note density and lack of bubbles.

Fig. 15. Molar with two posts. Note tendency of porcelain to adhere to one and pull away from the other.

If there is a point for fixation within the mass the shrinkage goes toward that point.

If there are two points of fixation within the mass the shrinkage goes toward one and pulls away from the other.

If a point of fixation can be placed in the center of mass, the strongest possible crown is the result.

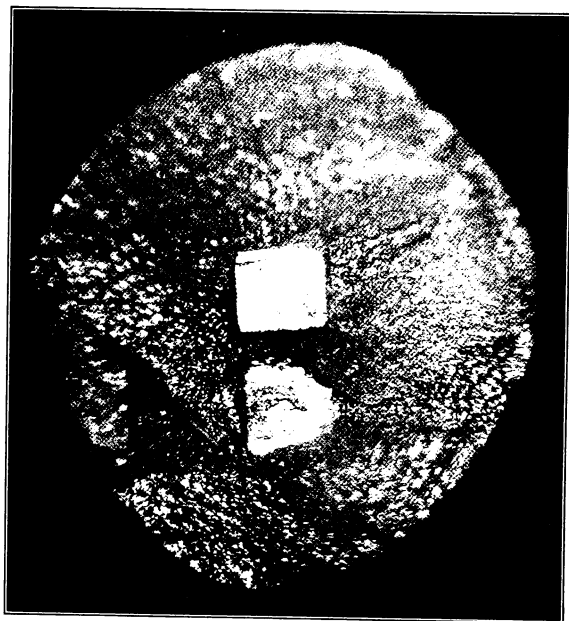


Fig. 14. Same as Fig. 13, higher magnification.

Two bakings are all that should be given a crown to obtain the greatest strength.

Burnishing the surface of a carved porcelain crown before baking gives a smoother surface to the finished crown.

The following illustrations show very plainly the presence of these qualities, as well as several undesirable ones.

Fig. 8 is a cuspid crown in which a facing was used, the pins being soldered to the post and the lingual portion built up with S. S. W. high-fusing porcelain. (Note the bubbles around the pins and post.)

Fig. 9 is a crown with a band of platinum surrounding the lingual and approximal sides above the plate, which was supposed to prevent

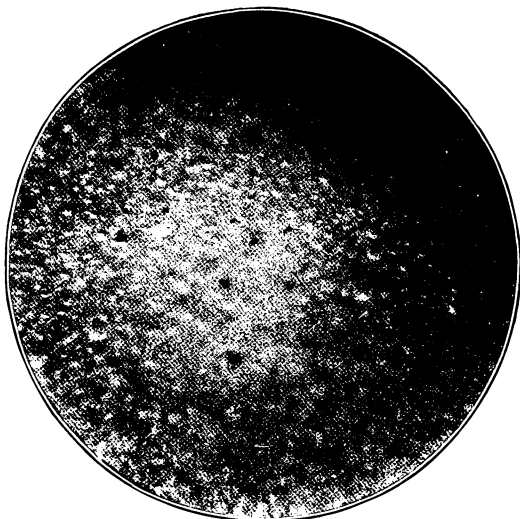


Fig. 16. Surface of an S. S. W. tooth as we purchase it.

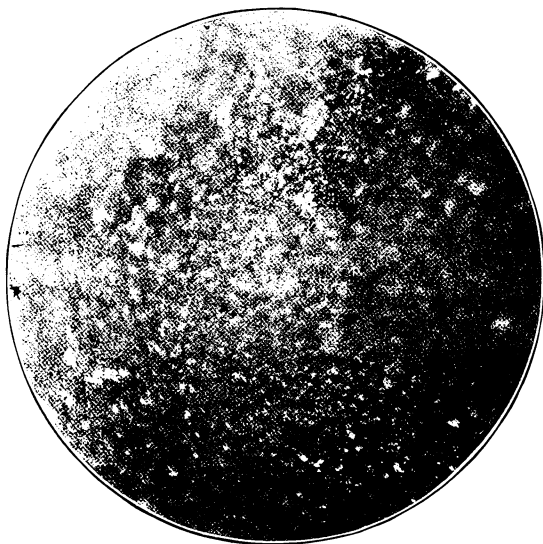


Fig. 17. Cross section of tooth shown in Fig. 16.



Fig. 18. Surface of hand-carved tooth made from S. S. W. high-fusing porcelain.

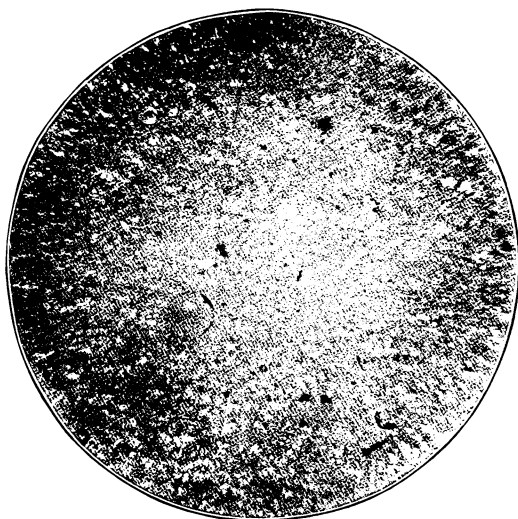


Fig. 19. Cross section of tooth shown in Fig. 18.

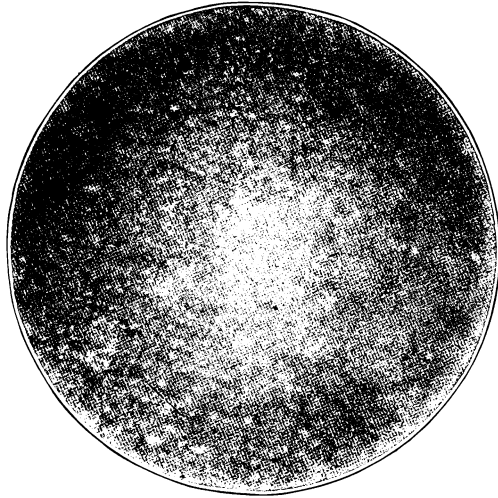


Fig. 20. Surface of Consolidated tooth as we purchase it.

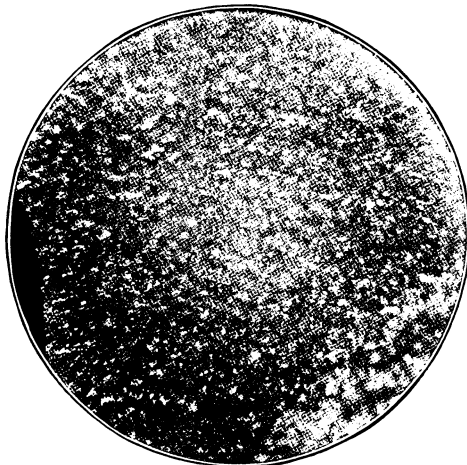


Fig. 21. Cross section of tooth shown in Fig. 20.



Fig. 22. Surface of a hand-carved tooth made from Consolidated high-fusing porcelain.



Fig. 23. Cross section of tooth shown in Fig. 22.

the porcelain from being forced off the plate when stress was made to bear upon it. (Note the bubbles and space inside the band.)

Fig. 10. The same more highly magnified.

Fig. 11 is an approximal view of the same.

Fig. 12 is a hand-carved bicuspid. (Note density of porcelain, adaptation to post and absence of bubbles.)

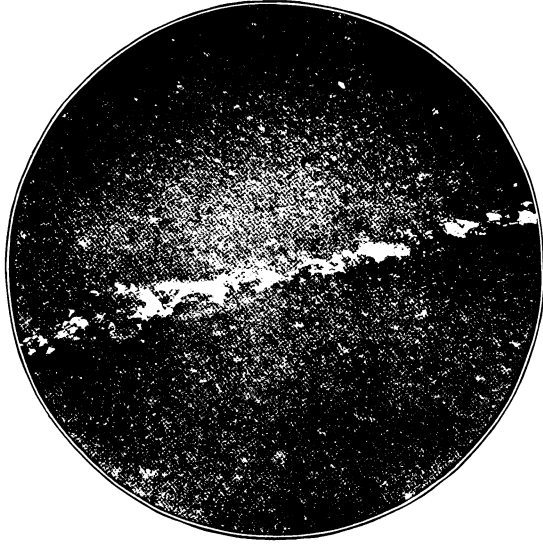


Fig. 24. S. S. W. high-fusing porcelain. Scratched before fusing and burnishing at one side of scratch to show advantage in improving surface.

Fig. 13 is a hand-carved bicuspid. (Note same qualities as in Fig. 12.)

Fig. 14 is the same as Fig. 13, more highly magnified.

Fig. 15 is a molar with two posts, showing the tendency of the porcelain to adhere to one and pull away from the other.

Fig. 16 is the surface of an S. S. W. tooth as we purchase it at the supply houses.

Fig. 17 is a cross section of the same tooth.

Fig. 18 is the surface of a hand-carved crown made from S. S. W. high-fusing porcelain.

Fig. 19 is a cross section of the same crown.

Fig. 20 is the surface of a Consoliate tooth as we purchase it.

Fig. 21 is a cross section of the same.

Fig. 22 is the surface of a hand-carved crown made from Consolidated high-fusing porcelain.

Fig. 23 is a cross section of the same.

Fig. 24 is the surface of a piece of porcelain baked from the S. S. W. high-fusing porcelain. On one side of the scratch across its surface the

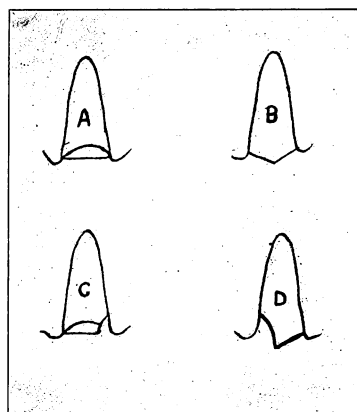


Fig. 25.

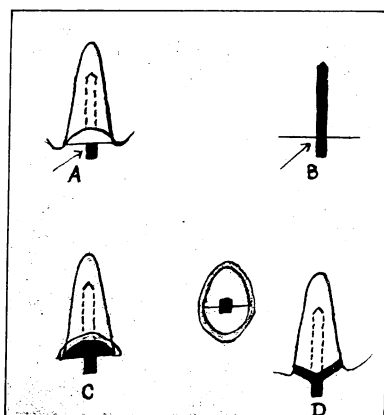


Fig. 26.

porcelain was burnished before baking. (Note its smoothness.) The other side was not burnished. (Note the uneven surface and minute bubbles upon the same.)

Technique for Hand- Carved Crown.

It gives me great pleasure to show in detail the construction of a crown that may be adapted to any root that it is possible to place a crown upon. This crown embodies, as I believe, all the essentials mentioned above. The detail is simple, easily mastered, and the possibilities limited only by the skill of the operator.

There are two methods of attachment: first, by an iridio-platinum post entering the root; second, the crown is made in the form of a porcelain shell covering a stump of the tooth, which form may be applied to either vital or devitalized teeth.

Root Preparation, First Method.

The tooth is excised and the surface end of the root ground so as to form two inclined planes, the periphery of which shall be under the free margin of the gum (Fig. 25 A, labial view, and Fig. 25 B,

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approximal view). The root may be so decayed that this form can be only partially obtained (Figs. 25 C and D). Whatever the form, some provision must be made to lessen the tendency of the crown to revolve upon the root. The root canal is opened for the reception of a square iridio-platinum post from 14 to 16 gauge, which is fitted to the root so that it can be easily removed, then marked where it protrudes from the root (Fig. 26 A). A piece of soft platinum plate from two to three-thousandths of an inch in thickness, according to the size of the root to be crowned, is laid upon a lead bar and the post driven through it. This method punctures the plate in such a manner that it makes perfect contact with the post on all sides. The post is forced through the plate until

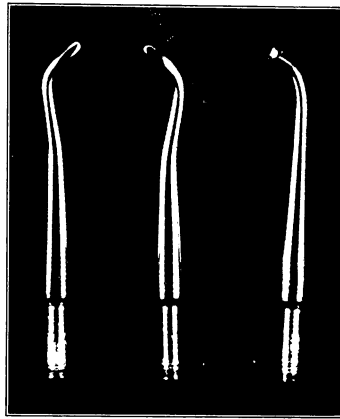
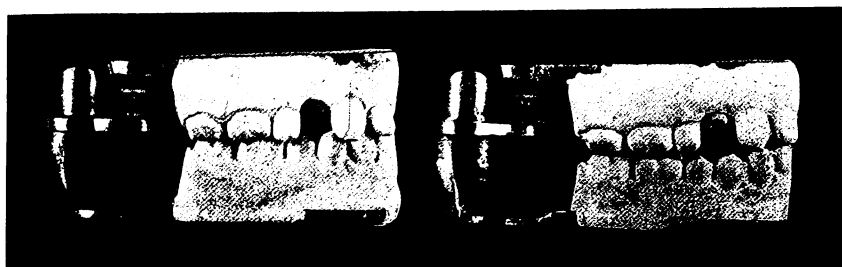


Fig. 27.

the mark (Fig. 26 B) where it protruded from the root is reached, then it is soldered with platinum solder.

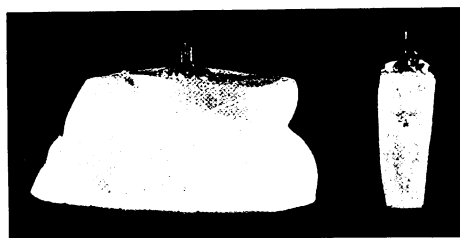
The plate and post are placed upon the root and the post driven to position. The periphery of the root is then outlined by the use of a small pine stick and mallet (Fig. 26 C), after which the plate is trimmed to within one-sixteenth of an inch of this line. Placed upon the root once more this excess is carefully burnished over the periphery (Fig. 26 D) with S. S. W. burnishers Nos. 10 and 11 (Fig. 27). Should the root be badly broken down it is best to pack with temporary stopping for a few days before making the cap. The periphery of the root must be well outlined through the plate and the angle formed at this point should be sharp and well defined. A ball burnisher, No. 25 (Fig. 27), ground so that its surface is flat, is a splendid burnisher for the surface of the plate. For a final adaptation of the cap a pad of vulcanite is placed between



a

Fig. 28.

b



a

Fig. 29.

b

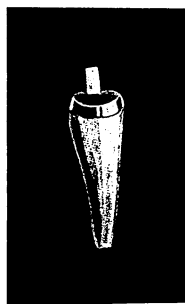


Fig. 30.



Fig. 31.

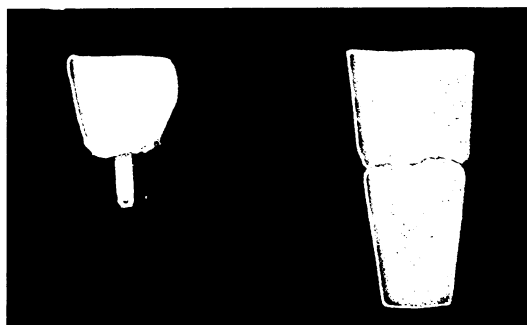


Fig. 32.

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the teeth over the cap and the patient requested to close upon it, thus swedging the cap to perfect adaptation.

A modeling compound impression and bite is now taken. If the cap and post is not removed with the compound it should be carefully removed and placed in its proper position in the impression. The part of the post that is exposed and the inner surface of the cap are coated with a thin film of wax; then the outer surface of the band is coated

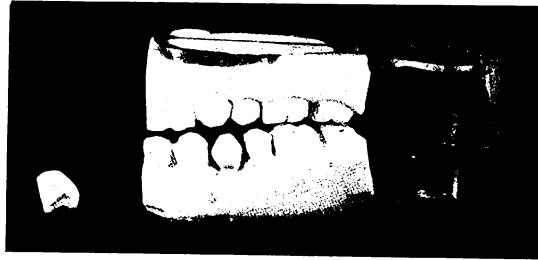


Fig. 33.



Fig. 34.

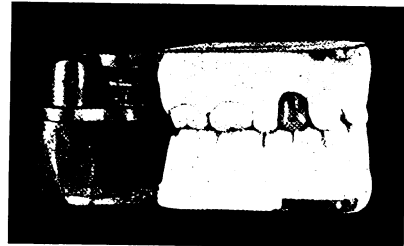


Fig. 35.

with a thick covering of wax. A plaster model and antagonizing model are poured, attaching them to a crown articulator that has a joint permitting a lateral movement.

While the plaster is setting the shade is selected. I find the best method, in my experience, is to select with a shade guide a tooth what is the proper shade. For convenience let us assume that No. 38 S. S. W. is the shade desired.

By covering the sample tooth with the finger, so that the cervical portion only is exposed, we find that with S. S. W. high-fusing porcelain, shade 1, matches this portion.

By covering the cervical portion and exposing the incisal half we find that shade E matches this portion.

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The plaster having set and the compound having been removed (Fig. 28 A), the adjacent teeth are carved away so that the space is widened one-sixth, to allow for the shrinkage of the porcelain, and the articulator set so that it is held open one-sixteenth of the length of the crown to be made (Fig. 28 B). The post and cap are now warmed over the burner and removed from the model. The wax is completely burned off, and when cold new wax is placed upon the root side of the post and upon the inside of the band and plate. A button of plaster about one inch in diameter in all directions is placed upon a glass slab and the post and cap placed, wax side down, into it (Fig. 29 A). When set the plaster is carved into the shape of a cone, the length of the cone determining the diameter of the tooth to be carved (Fig. 29 B). The post and cap is heated and removed from the cone, all the wax is burned off, then it is chilled in water and replaced upon the cone. A piece of glazed note paper, about two by three inches (Fig. 30) is wound around the cone of plaster and folded over at the bottom, forming a cornucopia, the length of which, above the cap, determines the length of the tooth to be carved (Fig. 31), and should be in excess of the required length, so that there may be plenty of porcelain to work upon. The porcelain that is to form the cervical portion of the crown is mixed to a thick creamy consistence and the cornucopia is filled with it, then jarred down by drawing the serrated handle of the carver across the paper over the plaster cone. The moisture is driven to the top and absorbed with a napkin. This is repeated until no moisture comes to the surface. The paper is then removed (Fig. 32 A). The porcelain is carved away, exposing the band, and then a thin instrument is forced under the band to the post, and the cap, post and porcelain carefully removed from the cone of plaster (Fig. 32 B). Carve the porcelain so that it will fit into the space on the model. Carve away on the labial side to the height desired for the cervical color, leaving the lingual side intact in incisors and cuspids (Fig. 33 A). For molars and bicuspids carve away both buccal and lingual sides (Fig. 33 B). In each case carve away at an angle so that the gray porcelain will overlap, causing a blending of the shades. Remove from the model and place upon the plaster cone again. Wrap the paper around the same as before. Add the other shade of porcelain, a little thinner than the previous mix. Add quickly in generous portions so that it may run down between the paper and the dry porcelain before it absorbs the moisture from the new porcelain. Jar slightly at first and absorb the moisture as soon as it shows, repeating until it is all absorbed. Remove from plaster cone as before and trim so that it will again go into place upon the model. Carve labial side to desired contour, then lingual side the same, using the adjacent teeth and the antagonizing

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model as a guide. It is always best to make the anterior teeth a line or two too long, as they can be easily ground off. The tooth having been blocked out, remove it from the model and complete the carving, holding the post in a broach holder. The surface is smoothed with the ball of the finger, thus removing all traces of the carver. The chips and powder are brushed away with a large camel's-hair brush. The surface is

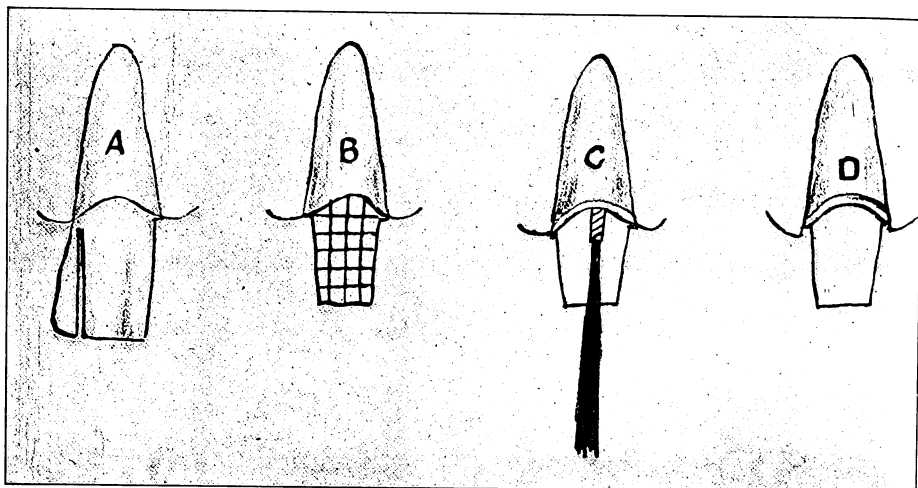


Fig. 36.

now all gone over with an S. S. W. porcelain burnisher to iron down the surface and make it smoother. The biscuit bake should be made in not less than seven minutes. Try the crown upon the root and re-adapt the platinum to the surface end of the root (Fig. 34). Fill in the space thus formed with new porcelain, and should there be any discrepancy upon the sides or incisal end it may be remedied by the addition of more porcelain at this time. Bake to a glaze, taking at least ten minutes for the same. Try in the mouth, and, if satisfactory, cut the platinum plate away from the post with a No. 1 round burr, wet the crown and carefully peel the platinum away. Should there be any feather edges around the periphery of the base of the crown, these may be removed with an Arkansas stone. The crown is then ready for cementation (Fig. 35).

Root Preparation, Second Method.

Slices are cut away from the approximal sides of the tooth with a thin, wet carborundrum stone (Fig. 36 A). The labial surface is grooved (Fig. 36 B), then these squares ground down with a broader stone (Fig. 36 C). The lingual surface is treated in the same manner.

PROSTHODONTIA

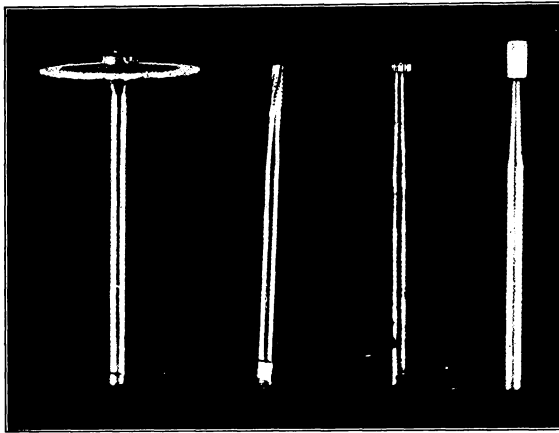


Fig. 37.

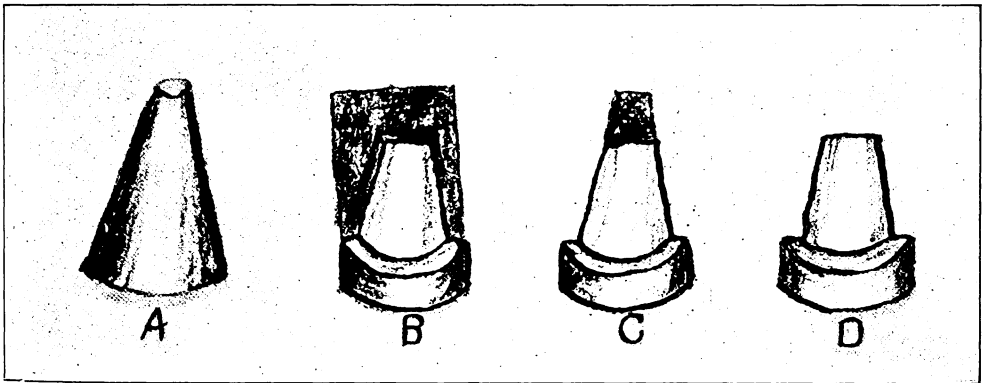


Fig. 38.

A cross-cut cylinder burr, ground smooth on the end, is used to form a shoulder at the cervix upon the labial and lingual sides. The approximal shoulder is formed with a thin carborundum stone with a flat cutting edge (Fig. 36 D).

A wheel plug finishing burr is used to finish the shoulder on the labial and lingual sides, and for a final polish Arkansas stones are used (Fig. 37).

The matrix for centrals, cuspids, bicuspid and molars should be of 1/1000th of an inch *soft* platinum plate. Laterals and lower centrals and

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Fig. 39.

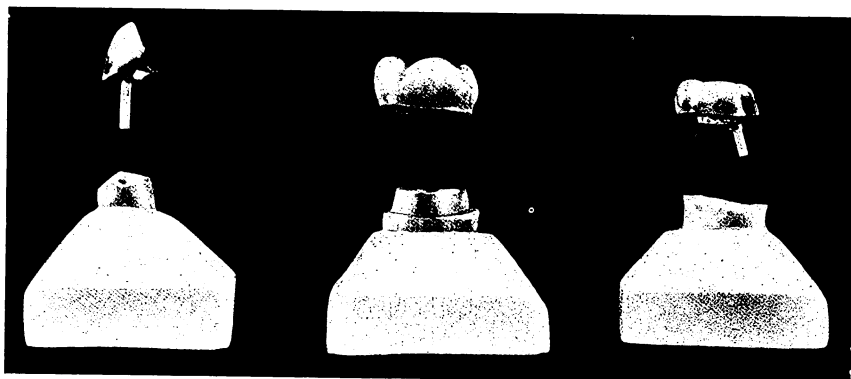


Fig. 40.

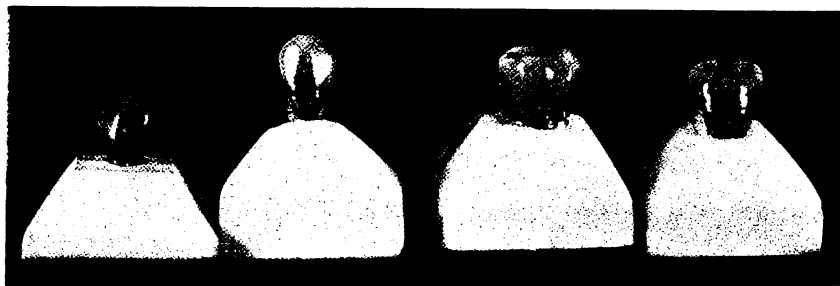


Fig. 41.

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materials should be 1/2000th of an inch soft platinum. A cone of platinum is formed slightly larger than the dentimeter measurement above the shoulder and soldered with platinum solder (Fig. 38 A). Trim this cone to conform to the gum line and cut away until it fits the tooth snugly at the shoulder. Work the labial and lingual sides down to adaptation with a pine stick. With the thumb and finger squeeze the excess to the sides and trim a portion of it away (Fig. 38 B). Bend this excess over, forming a lap joint. Trim the incisal end and fold it over (Fig. 38 C). Burnish carefully with the same burnishers used for the other crown, making a well-defined outline at the shoulder. Swedge to final adaptation with vulcanite (Fig. 38 D). From this point on the procedure is the same as in the preceding crown. The completed crown is seen in Fig. 39. This style of crown is well adapted to the needs of molars and bicuspid. Molars may have two posts set in their root canals at any angle and then a core of amalgam built up around them (Fig. 40 A). The matrix is made over this core, the shoulder being formed by the tooth that has been ground down flat below the gum line. The pulp chamber may be opened and a post placed in one root with a tenon of porcelain entering the pulp chamber (Fig. 40 B, Fig. 41).

While I do not lay claim to originality for this crown in its entirety, as it is an evolution from the crowns previously discarded by various operators, here and there throughout the technic I have suggested certain methods which, in my experience, have proven most satisfactory.

Of necessity there are many variations of this style of carved porcelain crown, and each case is more or less a law unto itself but the main points in the technic given are of value in establishing a high standard for porcelain crown construction, without which the individual characteristics of each case cannot be satisfactorily reproduced.





Gold and Porcelain Inlays by the Indirect Method.

By W. D. TRACY, D.D.S., New York.

Read before the Central Dental Association of Northern New Jersey, May 19, 1913.

In describing the technique involved in the making of inlays, we use the terms "direct method" and "indirect method," according to the process by which the inlay is constructed.

The direct method as applied to gold inlays implies the making of a wax pattern directly in the cavity in the tooth after it has been properly prepared.

The direct method as applied to porcelain inlays implies the making of a platinum or gold matrix by burnishing the matrix material directly into the cavity in the tooth after it has been properly cleaned out and shaped.

The indirect method as used in making either cast gold inlays or porcelain inlays implies the taking of an accurate impression of the cavity after it has been properly prepared, and when the occlusal surface is involved, a wax bite is also taken.

With these three steps accomplished, viz., the cavity prepared, the impression of the cavity taken and a bite obtained in wax, the patient may be dismissed and the inlay or inlays completed in the laboratory by a trained assistant, or at the personal convenience of the operator himself.

The setting of inlays made by this method is a matter requiring but little time and usually but little grinding and polishing.

It is not within the scope of this paper to discuss the merits of the cast gold inlay as compared with the gold foil filling, but for the pur-

poses of the evening, we will assume that a perfectly fitting cast gold inlay, is at least as good as the perfect foil filling—otherwise we would not be devoting so much time to the study of inlay methods.

Personally, your essayist feels, that in almost all compound cavities in the bicuspid and molars, the perfect cast gold inlay is far superior to the most perfect of gold foil fillings.

It is assumed that we all understand the requirements of cavity preparation for inlay work both in the use of cast gold and porcelain. The main points of importance are extension of cavity margins into areas of

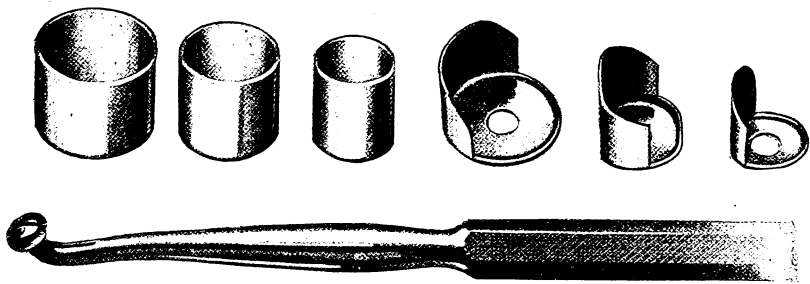


Fig. 1.

safety together with the obtaining of proper retention form, resistance form, and shape permitting the free draft of the impression from the cavity.

While none of these details may safely be slighted, the necessity for especial care in retention form is evident, and sufficient resistance to the stress of mastication must be provided if the inlay is to perform its mission and be in reality a permanent filling.

Some of the worst failures in cast gold inlay work may be traced directly to lack of resistance form in the cavity preparation.

Taking the Impression.

Having the cavity properly prepared and free from filings and debris, a Roach impression cup (Fig. 1) is trimmed with a pair of short-nosed crown scissors and shaped with a pair of pliers in such a manner as to embrace those portions of the tooth of which the operator desires to obtain an impression.

For example, in dealing with a compound cavity in a lower molar involving the occlusal and mesial surfaces, the impression cup is so fitted as to engage the whole of the anterior aspect of the molar, passing generously around toward the lingual and buccal surfaces and covering practically all of the occlusal surface.

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It is safe to say that ninety per cent. of cavities of this class, in bicusps and molars can be taken in modified Roach impression cups shaped to approximately fit the individual case.

In the remaining ten per cent. of cavities it will probably be necessary to construct special trays or cups to meet some peculiar conditions to which the Roach cups are not adaptable.

Some of our best inlay workers recommend the making of a special cup for each impression taken, claiming a better adaptation of the cup to the contour of the tooth, resulting in a better imprint of the cavity.

It is possible, however, by proper manipulation of the Detroit modeling compound, which is recommended for this purpose, to obtain a perfect impression of any cavity where a free draught is established, even though the fit of the impression cup itself is not perfect.

This statement is not made to encourage a slipshod technique; but, as one of the merits of the indirect method of making inlays, is the time-saving feature; it seems needless to spend time making a cup for each cavity.

When the cavity margin lies under the gingival margin it is good practice to pack the mouth with cotton rolls to obtain dryness and place a small piece of one of Parke, Davis Co.'s No. 151 cocaine and adrenalin tablets upon the gum septum.

These tablets are cylindrical in form and can be cut into four or five small pieces, one of which placed upon the gum while the impression cup is being fitted, will be sufficient to blanch the gum and render it free from pain, even though the operator may have to press the impression material well under the gingival margin. This is a small detail but one that will be appreciated by your patients.

With the impression tray properly fitted, one end of a stick of Detroit modeling compound is held well above the flame of a Bunsen burner, thus making it soft and easy to manipulate, without fear of burning it and injuring its physical properties which adapt it so well to this work.

When soft, a small portion of the compound is rolled into a ball and pressed into the little impression cup, which has been previously warmed, so that the compound will stick to it. The cup is then placed upon the carrier handle provided for the purpose and the compound in the cup is partially cooled, either with a blast of cold air, or by dipping it in a glass of cold water.

A tiny bit of white vaseline is rubbed on the surface of the compound, which is now warmed again over a small bracket Bunsen or alcohol lamp and gently but firmly pressed to place, using considerable

pressure upon the mass with the thumb or fingers after the holder is removed from the cup.

While pressure is still firmly maintained upon the impression, it is cooled by a stream of cold water from the syringe and thus any tendency on the part of the compound to shrink or change in shape is at least reduced to the minimum. Before removing an impression of this sort from the cavity it is well to examine the surplus impression material that may have squeezed out into the interdental space, and if enough is present to cause any difficulty in removing the impression from the tooth, it should be cut away.

Care should be used in removing the impression from the cavity so that it will not be bruised or damaged in any way.

In following out the technique as described above the main points necessary to success are provided for: First, the compound is confined in a manner that will prevent crawling or pulling away from the edges of the cavity; second, the surface of the compound, which is to give the actual imprint is lubricated with the slightest film of vaseline and is soft enough to follow the most minute detail of the cavity, and third, the bulk of the compound farthest away from the surface presented to the cavity is hard enough to crowd upon the softened portion of the material, thus giving an imprint practically perfect in its detail.

The first attempt to get an impression of a difficult cavity is not always successful, but an examination of the faulty impression gives one an intelligent understanding of the cause of failure and the second effort should result in success.

After some experience with this method the operator finds his impressions are clean cut, with clear and well-defined margins and great accuracy of detail, and he may feel assured of a perfect fitting inlay if he uses the same care in the making of the amalgam die and other details that he has used in taking this first and most important step.

A strip of ordinary base plate wax about an
Taking the Bite. inch wide by three inches long is quickly obtained
by making a line across a sheet of wax with a knife
point and breaking it at the line. This wax is warmed and rolled upon
itself into a small mass and pressed into convenient shape with the
fingers.

Having examined the normal closure of the teeth in order to detect an error in case the patient should be inclined to bite wrong, this mass of softened wax is pressed firmly into the cavity or cavities using the thumb and finger of the left hand to prevent the wax spreading too freely on the labial and lingual surfaces and pressing well to place with

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the index finger of right hand. The patient is now told to close the teeth and the wax is manipulated to conform as closely as possible to all surfaces of the tooth that is being operated upon and its near neighbors as well. The accuracy of the closure should be determined by observing the teeth on the opposite side of the mouth, because whenever any substance is placed between the teeth there is a normal tendency for the mandible to swing to that side. The wax is now cooled and re-



Fig. 2.

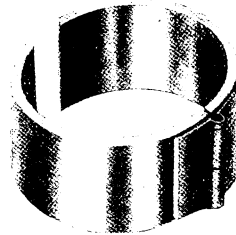


Fig. 3.

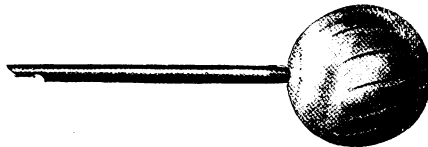


Fig. 4.

moved from the mouth (Fig. 2). Any surplus is trimmed away with a warm wax knife and this bite, together with the impression, is handed into the laboratory with a work slip on which is written the name of the patient, the tooth and location of cavity and the day and hour on which the inlay is promised.

Where many inlays are being made, this precaution is quite necessary, as the cavities are often so nearly alike that they are apt to get mixed up.

Laboratory Technique.

The impression of the cavity is now pressed into a mass of plaster of Paris after the plaster has just begun to set, thus obtaining a sort of a plaster matrix into which the amalgam is to be packed to obtain a die reproducing the cavity.

This is best done by the use of a split ring made for the purpose (Fig. 3). With the ring closed, a mixture of plaster is poured into it, and just as it begins to set the impression is pressed down into the plaster till the impression itself lies three-eighths of an inch below the

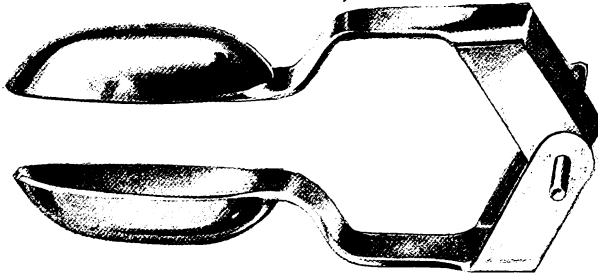


Fig. 5.

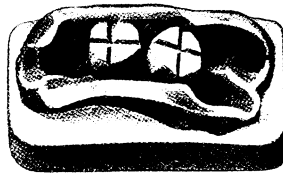


Fig. 6.

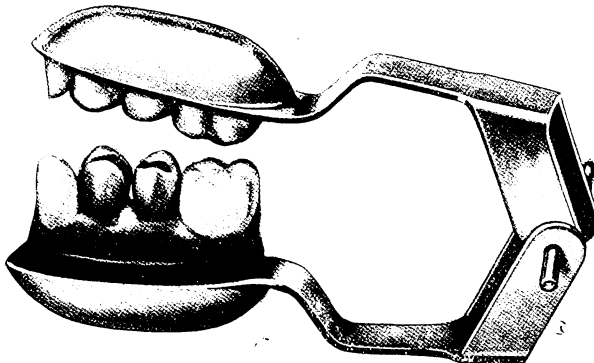


Fig. 7.

surface. Care must be used to prevent the plaster curling in upon the surface of the impression, but if plaster is not too thin this trouble will not occur.

When the plaster is set the ring is opened and a neat plaster matrix is ready to receive the amalgam (Fig. 8).

Packing the Amalgam.

For making a die any good silver alloy may be used; but it must be thoroughly mixed and with more mercury than would be used for filling purposes. For mixing large masses, a rotary pestle made of marble, mounted for use in the dental engine (Fig. 4) is helpful as a time-saver, and after mixing in the mortar, the mass may be twisted up in a piece of rubber dam and rubbed briskly in the palm of the hand, thus obtaining a smooth plastic amalgam ready for use. Beginning with small pieces, the amalgam is carefully packed into the impression which has just been imbedded in plaster as described. Smooth

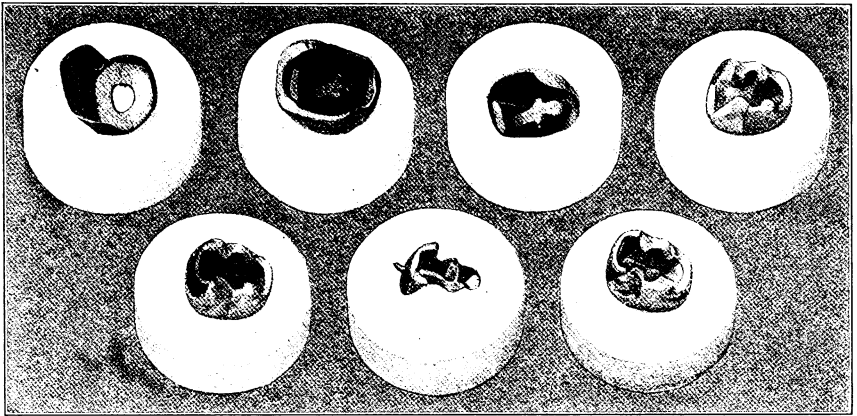


Fig. 8.

packers are used and the amalgam is carried first into the deeper parts of the impression, larger pieces being added and more pressure being used as the work advances, thus expressing the surplus mercury.

Large cotton pellets under pressure of an orangewood stick or the rounded end of an instrument handle, will help condense the mass. Surplus mercury may be absorbed with tin foil.

It has been suggested that good results may be obtained by putting a mass of soft rubber over the packed amalgam and submitting it to pressure in a small screw press; but dies made in this way in the laboratory of the writer show no advantages over dies packed as described above.

Other materials such as copper amalgam, oxyphosphate of zinc, oxyphosphate of copper, Ascher's enamel, etc., have been used for the making of cavity dies; but for accuracy and uniformity of results in obtaining a perfect die, a good silver amalgam is the best material at present obtainable.

After the die is hard the plaster is split away, the compound of the impression is warmed and removed and the die shows as perfect a replica of the cavity as it is possible to obtain.

Surplus amalgam on the die is trimmed away with an abrasive wheel on the lathe and smoothed off with a disk in the engine and a deep cross cut on the butt of the die so that it may later be removed and correctly replaced in the plaster articulation.

Making the Articulation.

In getting up articulating models which show the tooth to be inlaid, the adjoining tooth and the antagonizing teeth on the opposing jaw, a small plaster articulation may be made. As a matter of convenience, however, the small inlay articulator of the Detroit Mfg. Co. is recommended (Fig. 5).

First put the amalgam die in proper position in the wax bite, pressing it gently but firmly into place (Fig. 6). Wet the wax bite and flow plaster into both sides of it at once and attach with plaster to the articulator frame.

When this is hardened, the wax is warmed and removed and thus an accurate working model is obtained (Fig. 7). The die which has been marked on its butt end may now be removed and conveniently held in the hand while the wax model is being placed and properly contoured and carved to reproduce the minute detail of the tooth anatomy.

By replacing the die in the plaster articulation the correct, approximal contact and occlusal relation is quickly obtained, and when properly smoothed the wax model is placed upon the sprue former, invested and cast.

One of the secrets of turning out a perfect inlay is the manipulation and carving of the wax model. Remember that it is easier to carve wax than it is to carve or shape the gold after it is cast.

The day has gone by when a dentist may simply stop up a cavity regardless of contour or occlusion and have it pass as good dentistry. To-day you are taught the importance of establishing a firm contact point on approximal fillings; the necessity of building up the marginal ridges, and you are also aware of the imperative need for the proper reproduction of the minute detail in the anatomy of the occlusal surfaces.

Large smooth masses of gold cemented into molars and bicuspid may pass by the name of inlays; but they cannot be accepted as good inlays, nor in any sense as good dentistry.

Many men have realized that if they wish to re-establish masticating efficiency in broken-down molars and bicuspid that they must necessarily restore the details of the tooth anatomy, and their work shows the results of their study in that direction.

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The importance of this detail in the making of cast restorations has been explained and dwelt upon at some length in able papers presented by Dr. J. Lowe Young and Dr. H. W. Gillett, both of New York. Fig. 8 show the various stages of producing a properly contoured inlay for a molar occlusal cavity.

Finishing the Inlay.

After casting, the sprue is cut from the inlay and it is placed in the amalgam die for convenience in holding. The surface is gone over with sand-paper disks and then with rubber finishing wheels which may be obtained by cutting round pieces out of a typewriter eraser with a disk punch and mounting them on screw mandrels.

There is sufficient grit in such wheels to cause them to cut freely and at the same time they leave a beautiful dull finish on the gold.

Advantages of Indirect Method.

In using the indirect method of constructing cast gold inlays or porcelain inlays, the operator notes certain advantages which he does not enjoy when working by the direct method.

With a perfect impression, and in the case of compound cavities involving the occlusal surface, a wax bite to go with it, the cavity or cavities may be stopped with gutta-percha and the patient dismissed, thus saving to the patient the time that would otherwise be used in making a wax pattern for a gold inlay or a platinum matrix for a porcelain inlay.

Having obtained an amalgam die which is as perfect a reproduction of the cavity as we now know how to make and having it incorporated in plaster models showing adjoining teeth and occluding surfaces of opposing teeth, the operator may go to his laboratory and construct his inlay suiting his own time and convenience and without further annoyance to his patient. Or, if he enjoys the help of a trained laboratory assistant, he may be relieved of much of the detail of the laboratory technique and later receive from his hands the inlay, ready to set.

In case of failure in casting, the operator is saved the embarrassment of calling in the patient for an extra sitting and may turn again to his amalgam die and make another wax pattern with very little loss of time and very little trouble.

Furthermore it is, in the estimation of the writer, a great deal easier to accomplish an artistic and satisfactory result in a complicated cast restoration by this method than by the direct method.

It is much simpler to carve a wax model mounted in an amalgam die, and produce an anatomically correct reproduction of the lost parts, including the cusps and planes, the marginal ridge, the sulci, the pits, and the tiny grooves, than it is to carve that wax pattern in the mouth.

If the carving is done in the laboratory it is done at a time when the manipulator is not hurried. The work is held in the hand, the light is good and all conditions favor a perfect result.

If the carving is done in the mouth it is apt to be done hurriedly. The light is imperfect, the tongue, the lips and the cheeks all act as obstruction and the saliva and possibly a bleeding gum all add to the difficulty of making a perfectly carved wax pattern in the mouth.

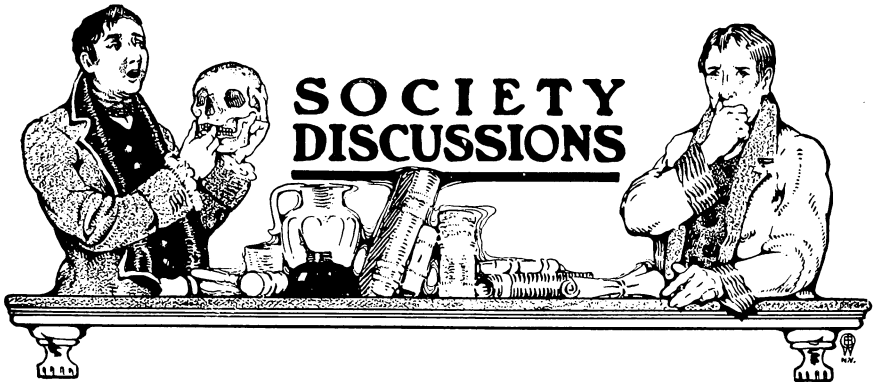
The great Taggart and a few of his closest followers perhaps, can do the work by the direct method and show perfect results; but for the rank and file the indirect method offers the advantages mentioned above and many other advantages upon which we have not touched.

When making porcelain inlays the platinum or gold matrix is easily and quickly made by laying the piece of matrix material over the cavity in the amalgam die and putting it into a swaging press. When pressure is brought to bear, the matrix is carried definitely to all parts of the cavity, and lies in much closer contact with the cavity walls than when made by the burnishing process which causes the metal to become refractory and springy.

Porcelain Inlays.

After the first bake, it is often desirable to replace the partly filled matrix in the amalgam die and reswage; correcting any slight distortion of the matrix, thus assuring a more perfect fit in the finished inlay.

Porcelain inlays made by this method are most satisfactory, as a rule, and except in extreme cases a uniformly good fit is assured and these results are gained with the minimum amount of discomfort to the patient.



Second District Dental Society.

February Meeting.

A regular meeting of the Second District Dental Society of the State of New York was held on Monday evening, February 10, 1913, at the Kings County Medical Society Building, 1313 Bedford Avenue, Brooklyn, N. Y.

The president, Dr. T. P. Hyatt, occupied the chair, and called the meeting to order.

The minutes of the last meeting were read by the secretary, and approved.

I have the pleasure to announce to our members this evening that we are visited by the president of the Seventh District Dental Society, from Rochester.

I know you will all be very much pleased to have him with us to-night, and I will ask Dr. Grimstol to come up and sit with me.

I also have the pleasure of introducing Dr. Wheeler, president of the First District Dental Society, and I invite him to the platform as well.

The paper of the evening, entitled "The Technique of Hand Carved Porcelain Crowns," illustrated with lantern slides, was read by Dr. Charles K. Buell, of Buffalo.

Discussion on Dr. Buell's Paper.

It is quite a satisfaction to me to be here, because the line of work that Dr. Buell has been doing is of very great interest to me, the reason being that I have so long used specially made porcelains, that

**Dr. H. Gillette,
New York.**

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except for temporary work I have forgotten that there are moulded porcelains. I am interested whenever anyone presents an advance in technique, or a different technique for the handling of porcelains, because I feel that we cannot by any means do justice to the cases that come into our hands with the things—not teeth—that are provided for us by the supply houses; and anything that will make it easier for the operator to avoid those miserable detachable facings which are being presented to us is certainly an advance.

I am very much interested in Dr. Buell's technique for the placing of his porcelain or enamel bodies, because it is different from anything else that we have had. I have been waiting hopefully for Dr. Van Woert to get out that porcelain press of his so that we could have it for all sorts of porcelains, and it would seem possible from what Dr. Buell has shown us, and from what I am told of the quality of work he is doing, that he is by this "pouring process," which is the term I have heard Dr. Van Woert use for it, attaining somewhere near the density that we can attain with a press. Perhaps Dr. Van Woert will express himself during the evening on the comparative methods of these two processes, but that is to me a new idea.

The thing that does puzzle me a little is to know whether Dr. Buell, with that enamel material gets in his finished result, strength which compares favorably with porcelain made from tooth body, and then moulded along the lines that many of us have been familiar with, especially those of us who spent any of our earlier years in and about Boston, or within reach of Boston.

I would say in this particular respect, when I speak of using porcelains it is not only the matter of single crowns, but I am referring to any and all porcelains used in the mouth. I do not suppose I have for fifteen years used two per cent. of stock porcelains of any kind for any sort of work, and I will say a little more about that later.

The increase in the artistic possibilities from this work is immense, as compared with what we can do with stock material, and the increase in strength is equally important. Dr. Buell emphasized three points at one stage in his paper as influencing him in the selection of the technique that he carries out, that is, possibilities of getting an accurate fit, freedom from irritation of surrounding tissues, and strength of material.

Protection of Root in Crown- work.

I would like to add to that, the suggestion that you do not forget the requirements for supporting and conserving the strength of the root. It is because of some early disastrous experiences with crowns of the Logan type that I have resolutely throughout all my professional life set my face against that type of crown.

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I realize that many of you will immediately conclude that I am still using a good wide and thick band, but I am not doing quite that, because I am not forgetting that point that Dr. Buell has emphasized: the preservation of the health of the tissues round the root by leaving a smooth joint there. I think all of us who give thought to that have drifted away from those old wide bands.

But I do as yet retain some sort of metal cope or plate as a part of my permanent crown work, partly because of better contact, so far as any technique that I have been able to apply—better satisfaction with the fit to the root end, and with the smoothness and perfection of the joint at that point, and because with our present casting processes I can still further strengthen or support my porcelain against the liability of breakage through the stress.

Porcelain Bodies.

I have already mentioned one of the points that interested me, that is, whether Dr. Buell really does get strength with this enamel material which I understand him to be using, the high fusing S. S. White enamel. The extra high fusion of the Consolidated porcelain, in my experience, has been much more along the line of work that some of you are familiar with, as being more common in and around Boston, the work that comes down to us from the older Moffatt and Parker, in the actual applying of it to our needs from the older Woodman and the present Woodman. The Woodmans never had any other occupation than making crown porcelains, and have made, as some of you know, porcelain teeth that are, I will venture to say, three or four hundred per cent. stronger than stock porcelains; but they not particularly artistic, though made with the type of body and enamel that was used so much in and about Boston. Thus for my own usage I developed in my own laboratory along the line of the Parker bodies, but these are now unobtainable. Dr. Parker is dead, the son who could make them has moved to San Francisco and refuses to make any more, and other than stock in the hands of two or three men who are carefully preserving it, none exists. I have a little, but not the colors I need most. The bodies made from the formula of Parker, or resembling that formula, present conditions which seem to me pretty nearly ideal. Dr. Moffatt, of Boston, has had developed at the hands of the Consolidated Dental Manufacturing Company a set of bodies which very closely approaches the body of that formula, and he assures me in results, to the old Parker bodies. I was very much interested to learn that from him last Wednesday night, at the section in crown and bridgework of the First District Society, because the first lot they put up for him was entirely unsatisfactory. That was due to the fact that they thought they knew more about porcelains

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than he did and insisted upon doing it their own way. The porcelain that can be had from him now, he assured me, is very satisfactory, and I think probably more satisfactory than what I have been using in my laboratory, namely, the regular stock bodies I get from the Dentists' Supply Company; they are stock tooth bodies and enamels, except as they mix up certain special colors for me sometimes.

Burnishing Porcelain.

One of the points that Dr. Buell has emphasized two or three times in his paper is with regard to the smoothing of a surface. To me the highest artistic excellence in this special porcelain work, comes from omitting that smoothing. The leaving of the lines, the facets, resulting from working over the plastic mass with a spatula, allowing those little differences of surface to remain permanently in the porcelain, adds very much to its satisfactory appearance when inserted in the mouth. Most of such work we do not do for sixteen or twenty-year-old people; we do it for people past middle age, and we spend more time in my laboratory in producing imperfections that shall add to the natural and artistic appearance of the work, than we do in producing smooth surfaces.

Working from Models.

One of my chief disappointments in Dr. Buell's technique as he shows it to us is the need for his using his model to the extent he does. I presume that in practice I might not find the difficulty, which I do in theory in reading his paper and seeing his pictures, because the line of work is so different. He is evidently doing these things with his own hands, and he is able from his knowledge of the case to supply all that he has cut away, and he does not miss the part he trims out from his plaster teeth. My line of work is entirely different. I do what work is necessary, take a plaster impression, never a modeling compound impression; I take as accurate a bite as I can, and unless there is some question to be presented to my attention I do not see that piece of work again until the patient is in the chair. Of course, that presents a very different line of work in some respects. I would fear from an attempt to follow out that technique of drilling away the plaster teeth, so as to get room for the extra size, that when the finished result came to the chair it would be unsymmetrical; the contour would not be what I wanted.

Very likely Dr. Buell may be able to explain that away. There are one or two thoughts that came to me as I read over the paper in connection with the point I have been referring to, that of cutting away the adjacent plaster teeth in order to get room on the cast for the extra size one needs for his shrinkage. I have heard a lot about, but have never seen, the wonderful pair of calipers that Dr. Van Woert is sup-

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posed to have, by which he is able to calculate all these changes in size, and perhaps he will give those calipers to us some day.

Then there is the question of correcting that change of shape in the little platinum cap. I do not know that this point has any great practical value, because it apparently merely comes up because of the difference of routine that would happen in my office and Dr. Buell's. Am I correct in that? You finish that with the patient in the chair?

Dr. Buell.

Yes. It is done all in one sitting.

Dr. Gillette.

That, of course, is such a different condition of affairs that the point I was about to make is not of much importance, though some of you may want to take up this line of work without exactly following Dr. Buell's custom of starting a crown and finishing it all at one sitting. You may want to do the necessary work at the chair and turn it over to the laboratory to be done at a convenient time. In such a case as that it would be, of course, a matter of inconvenience to call the patient back to try the crown on. It is quite possible the suggestion our friend, Dr. Ash, has made—to use a cement seat over the platinum base—might be of service there, because having made a correct cement seat you would be able to correct your base on that at any time without referring to the patient. I confess to a great liking for getting my casts and models in such shape that I do not need to go back to the patient. Accidents will happen, not only in our own hands, but in our laboratories, and it is a very satisfactory thing to feel that everything is so arranged that if something goes wrong in the porcelain work, if the color is not right or something of that sort, the laboratory man can set to work and correct his difficulty.

With regard to the porcelain jacket crowns, I practically never attempt to do anything of that sort at one sitting. I prepare the tooth, take an impression of it and the bite make an amalgam die of the trimmed tooth, which is set in the impression and the laboratory man has a replica of the essential parts of the mouth to work on, and that side of the work goes on just exactly along the lines followed in the indirect inlay system.

Dr. Ottolengui.

I would like to ask Dr. Gillette a question. If you object to cutting away the model, will you tell me how you can try the porcelain tooth on that model except after it is fused? And how do you get your bite so that the length of the finished tooth is correct, if you have no chance to try it on the model prior to fusing?

Dr. Gillette.

The disappointing thing to me is ever to destroy an accurate model. I would want to add in some way to this technique a means of having an accurate

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cast. If I had to destroy one I would want to make a duplicate. I am not trying to provide the remedy. I am pointing out this difficulty with the hope that Dr. Buell will provide the remedy. Dr. Buell's work is very interesting, and anything of this sort which will provide us with a means for increasing the strength, fit, artistic excellence, and correct reproduction of occlusal surfaces, is of interest and of the greatest importance to us, and I appreciate very much all that Dr. Buell is doing.

As long as I am on the floor I want to say a word or two beyond that concerning the possibilities in other lines. As you have seen from what I have already said, I have been using during all my professional life specially made porcelains, the type of porcelain that is used a great deal through New England, coming from the hands of Woodman. There is a stock crown known as the Consolidated porcelain crown. It has a slot, and is intended to be cemented to the base. We now have the means of casting accurate seats for such porcelains. For many years I used to burnish a gold or platinum backing, and insert a dowel into that which was soldered, and the place between that backing was filled in with solder, making the same fit which we get now more easily by the casting process, and it is entirely feasible to have these specially made porcelains for all sorts of cases.

I have developed my own laboratory along that line, and we make individual teeth, blocks of teeth, continuous gum, bridge pieces, and everything of that nature.

One of the places where the specially made porcelains are of greatest service, is the occasional case where it seems desirable to replace not only the crown of a tooth, but a portion of the root of the tooth with a porcelain substitute.

It was a matter of considerable regret that I was unable to get in touch with a patient from whom I could have obtained a cast of a case of that sort, which I think possibly might interest you, but a description of it will suggest to you the conditions.

History of a Case from Practice.

A central incisor with sound teeth on each side of it had gotten into a condition by reason of chronic abscess and absorption where it seemed undesirable to allow it to remain longer in the mouth. It had a decidedly wide space on each side of it, and the gum was considerably receded. Anything that could possibly have been supplied from stock teeth would have been an abomination. Any tooth that was wide enough to fill the space was impossible. A tooth that was of the right width meant showing too much gold, and was very objectionable. A plaster impression was taken, the plaster tooth repre-

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senting that central was cut out, a hole was made in the plaster representing the space for the root, and a porcelain was developed with a dowel hole in it, and this was extended well up into that hole and pink porcelain put over the surface to match pretty well the color of the gums. It was supported on the two adjoining teeth, and instead of three backings, calling them such just for convenience, being soldered together, a light bar was curved up, one on each side, so that they came together on the backing of the porcelain tooth, carrying the gold entirely out of sight. The natural tooth was not extracted until the bridge was completed. It was then extracted and the bridge was inserted the same day.

I saw that case two or three weeks ago, after it had been in the mouth about a year, and I had one of those attacks that occasionally come to all of us, when we really begin to think we are quite dentists after all. I sent out for three or four of my friends to come in and look at it, and the object of this long story, is to call your attention to the possibilities in those occasional cases where an incisor must be removed, the possibility of so managing the case by making or having made for you a special porcelain for the case. You can retain the gum in pretty nearly the normal condition, so that it will appear normal under the movements of ordinary habits of every-day life, and not be obtrusive as a shrunken gum and long tooth lying upon it.

Artistic Bridgework.

Another possibility I want to call to your attention in this work. I have now two cases in hand, both of them full upper removable bridge pieces, supported in one case on seven and the other on eight roots. One of them is a case where the gum has receded from the incisors more than half the length of the roots, and the teeth have grown down. These are not really old-looking teeth, the patient is sixty or so, very particular about her personal appearance, very apprehensive lest any of her friends shall know that something has been changed in her mouth, and because of the possibilities of the hand-made porcelain I have promised both of these patients that they shall be supplied with a substitute for their teeth that their ordinary acquaintances shall not recognize as a change from their own teeth.

Now in one case the first of two duplicate sets is being worn. I put this in just before going to Chicago, and when I got back I inquired about it of the sister of the patient, who lives with her and, of course, sees her constantly, and found out from her that she had not discovered that the teeth had been changed until the Sunday night previous, when the sister told her about it.

I am not speaking of that to show what I can do, but to emphasize to you what can be done. You can reproduce the imperfections, the

A decorative flourish with symmetrical scrollwork and floral motifs framing the text.

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expression of which is the highest artistic excellence that we can obtain in porcelain work.

**Dr. Norman Essig,
Philadelphia.**

It would almost seem as though the discussion of this paper was announcing a state of affairs which I have personally looked forward to all my professional life, and it would also seem that Dr. Gillette has received his early ideas from the same source from which I obtained mine, because I almost feel that it is unnecessary for me to make any remarks at all after hearing what he has said.

I think perhaps in looking at it from my own standpoint, the feature of the hand-carved porcelain tooth or crown which will probably affect us most, is its enormous range of possibilities. As Dr. Gillette has said, all the little imperfections which keep us from noticing a denture or a bridge or a crown, or anything that may be newly inserted into a mouth, may be accurately carried out in details by either the hand-carved porcelain or the hand-carved tooth. I have had the pleasure this afternoon of seeing most of the technique except that of the burning. I was forced to leave just as one of the crowns was being put in the oven, so that I did not see it burnt.

I did, however, see the method Dr. Buell employs in building up his preliminary mass of porcelain, and I also saw some of the finished crowns that he passed to-night, and had an opportunity of looking at them in detail this afternoon. I had relinquished the idea of banding a root with a good deal of reluctance. I have had experience with the stock porcelain crowns—that is, such crowns as we buy—the Davis crown, Goslee crown, Logan crown, and even back as far as the old crown which was used in connection with a hickory dowel; that is my first recollection of a crown. I used to see my father work with these in the laboratory when I was quite a small boy, and I have some of them which have been in use ever since I have been in practice. It is rather remarkable that they lasted at all in a way, but my early training has always been to the effect that I should avoid the use of crowns not having a ferule or band.

Of course all these things progress, and progress in such a way that we sometimes have to give up things we have had in use for a long while, and it is very possible that I shall have to yield to the newest and latest devices which are continually put before us.

There are a great many instances where we cannot do just what we would like to do, with regard to the band; but we are very often forced to do wonders with very poor material—that is to say, in a large majority of instances the roots upon which we are to place our crowns are not in any way ideal. They come to us in conditions which are the

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result of accident, or neglect, or as the result of a great many objectionable phases. However, they come to us in such shape that we are not able to idealize.

Only within a very short time, I have had a number of roots that are very imperfect. They are not in any way adapted to form an ideal base or seat for a crown. In these cases I do not see how we could avoid using some metallic seat, or making some effort to grasp the periphery of the root; but I certainly think that wherever it is possible to use a porcelain crown, and especially a hand-carved porcelain crown, it should be done.

I believe with Dr. Gillette that the crowns of so-called porcelain teeth resemble more nearly buttons than anything else, and I have for a long time been treating them as raw material. If I want a small tooth I grind it down from a large tooth. If I want a large tooth I take a small one and build to it from above. I take a Davis crown, or any of the porcelain crowns which may fill the bill. I take these and build to them. I sometimes use a combination of porcelain and gum-tragacanth, which is something I learned from Dr. Van Woert, and use that to take an impression of the root and by greasing the root. I push it in place and then withdraw it, and it gives me a very accurate impression of the surface of the root of the periphery. Then any kind of a seat can be cast to that, to go with the case. With the cast base and the moulded porcelain crown you can get a very thorough adaptation, and probably in some instances it is the best we can do.

I do not in the least mean to criticize Dr. Buell's method, and I do not think it is fair at all to criticize the method of anyone; because Dr. Buell, as we know, is obtaining beautiful results, and if I am not able to take Dr. Buell's method and get as good results as he does, that is either because I do not grasp his technique, or because there is some other reason why I cannot do it.

Perhaps I may have a method of my own which may sound more imperfect than his, yet I may be getting as good results in my way as he is in his. If I were to make any change at all in the methods I have seen to-day, I should do so in the addition of gum-tragacanth to the mix of porcelain which he introduces into his little cone, because it has been my experience that with the mixture of the gum-tragacanth you can retain to a much greater degree any irregularity, imperfection, or peculiarity which you may want to carry out in your finished porcelain teeth.

The enamel waves which so often are a noticeable feature by reason sometimes of their being much discolored, can be carved in the mass after it has been dried, and it has been my experience that the settling

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down or coming together of the component parts, or molecular parts of the porcelain takes place to a less degree with the mixture of gum-tragacanth than it does with mere water. That would be one feature that I should inject into Dr. Buell's method, not because I do not think his is good, but I think I could do better with something more solid to carve. One of my reasons for using the gum-tragacanth would be that after the mass is hard you can almost sit on it. It is simply for my own convenience, and I could probably succeed better in this way.

Laboratory Construction.

As I primarily came here to-night to learn, I shall not make my remarks very long; but I want to say a word about the work being done in the laboratory in the absence of the one who takes the impression, and another word about the fact that should you have an accident with the crown after it is permanently put in the mouth, the only fault that I can see against the hand-carved porcelain tooth is that we cannot very well embody the interchangeable feature with the method.

As far as the work being done in the laboratory is concerned, that is something that I have had from my earliest instruction. We never see the work we have on hand after it leaves the office until it is finished, and as far as the quickness of the method is concerned, that in a way, especially in my own practice, would make absolutely no difference to me at all. We try as nearly as possible to avoid mutilating the model, and almost all of our models after they are finished are filed away with the name of the patient; so that in the event of anything happening we can restore or remake or repair any piece of work that has been done in our office, I suppose, in the last thirty years, unless some change has taken place in the meantime which we have had no opportunity to watch.

Dr. Gillette was speaking about the absolute reproduction of natural teeth in porcelain. That, as many of you know, has been a kind of pet theory or hobby with me for a long while, and I have carried that out to an extent which has been very satisfactory. In fact, I have a list of all my patients, and my secretary, if there happens to be anyone whose name has not been put on the list, writes it on my date card to take a record model, and I have record models of all my patients. The hand-carved feature of any part of prosthetic dentistry is a thing I never lose sight of for a moment, and the record models which I have filed away enable me to reproduce collectively or individually any tooth or teeth that may have been lost by any means.

I think the advantages of the artistic feature is apparent, and I think in a very short time no one will feel that he can disregard it, and I am very glad to see the hand-carved crowns coming into vogue. I

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am very glad to see men like Dr. Van Woert and Dr. Buell taking this up and pushing it to a satisfactory conclusion, because I believe it is going to work the salvation of prosthesis from an artistic standpoint, and I hope the porcelain crown will be taken up by all of us and given the position which it justly deserves in prosthetic dentistry.

Dr. Dills. There was one thing I would touch on, that about cutting away a tooth adjacent to that which you are crowning. My idea is to cut it down to the gum line.

Dr. Buell. I feel that there are quite a number of things I would like to say, but I realize the hour is very late, and I know it is difficult for Dr. Gillette to take from the pictures I sent him an accurate idea of the technique. It is a difficult thing to explain that part of the detail.

He spoke first of the body as being an enamel body. The fusing point of this is as high as the foundation body.

I would hardly call it an enamel body. The crowns I passed around here are crowns baked and passed around to show you how they come from the furnace. They are not crowns that have been touched up with a stone. The joints may be made more perfect with a stone. Each of you can obtain just as good results as I have obtained. It is not a difficult thing to do. I know that, because I see so many students doing it in the University of Buffalo, and they get results that are a credit to them.

The crowns are very strong. I do not think there is any question about the strength of the crown. I have used these crowns for ten years, and on all classes of roots, and have never used a band for any individual crown in ten years. I have never seen a root that I could not put one of these crowns on. It is not a difficult thing to do, gentlemen.

Dr. Gillette spoke, too, of not using the burnisher on the surface of the crown. This tooth is carved from a mass of porcelain, and you can reproduce any feature—that is, you can make any imperfection, and at the same time you will find that the adjacent teeth are very seldom rough. They do not have that surface that is left upon the crown without the burnishing.

As for carving away the model, Dr. Gillette thinks it destroys the model so that it is of no value for subsequent operations. That model can be preserved, and you can make a crown on that model just as well again as at first.

I do not believe there is one crown in twenty-five that I have to touch with the stone. I never have to add more porcelain. In crowns

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of that class, I think it is better to carry it through in two hours and a half of the patient's time, than to have him come again. All you do is to take your impression. Then you put on your temporary crown. Then when the patient comes back for the second sitting you have to reburnish that platinum and put the final backing upon it, which takes about fifteen minutes in all. I prefer to complete the crown, because you can do it easily in two hours and a half from start to finish.

Dr. Essig says he still feels he must use a band in some cases, but I have stated myself very clearly as to that.

To my mind the gum-tragacanth is not necessary to make this mass harder. If you want to have it harder, simply wait a few moments longer, the same porcelain will become harder. If you wait ten or fifteen minutes before you begin to carve, you will find it very much harder.

Again I want to say that I am just simply showing the technique, and each and every one of you can obtain the same results that I have obtained.

I want to move a vote of thanks to Dr. Buell
Dr. Van Woert. for his very valuable paper, and express my regret that all the gentlemen were not present at the clinic to see the actual work. They really have very little idea of the process, because they have not seen it demonstrated. I think all of you who were not present missed a great opportunity.

Motion carried.

Report of Dispensary Committee.

Mr. President and Gentlemen of the Second District Dental Society:

As Chairman of the Dispensary Committee, I made a report some month or two ago along these lines. The dispensary at 60 Schermerhorn Street has been taken over by the Department of Health of the City of New York, and is now entirely in their hands. So far as the Second District Dental Society is concerned they have no further responsibility. But you still have a tremendous interest in the clinics as they are the outcome of your earnest efforts in that direction, and I feel as you must feel, that it is a very satisfactory issue out of the clinic problem. As Chairman of the Dispensary Committee, I wish to extend their thanks to those who stood nobly by and gave their skill and time to making the old clinic of sufficient importance to attract the attention and create the desire to possess it in the hearts of the officers of the Department of Health and the Department of Child Hygiene.

You wish to know something about what the Department of Health

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is doing with your child? They are conducting and maintaining six clinics in the City of New York. Three of these have two operators and three of them have one. The Borough of Manhattan has two clinics, one at 449 East 121st Street, two dentists; one at 164 Second Avenue, two dentists. The Borough of the Bronx has one at 580 East 169th Street, one dentist. The Borough of Brooklyn has three, one at 124 Lawrence Street two dentists; one at 330 Throop Avenue, one dentist; one at 1249 Herkimer St., one dentist, and all this, to my mind, is a mighty good beginning, when you consider that it is only three months and a half since they took charge. Now, what are they doing? Dr. Cronin has kindly furnished me with a report up to March 15th, of what each clinic has done, but your purpose will be well served, if I only make you a condensed report of what has been done in all the clinics as a whole. However, I am prepared to furnish you with the results of each clinic if you so desire it. This report is for only January, February and up to the 15th of March.

Total all clinics:

No. Registered	1,305
“ Discharged.....	317
“ Normal	11
“ Cured	258
“ Dropped	81
“ Extractions	1,705
“ Deciduous	1,364
“ Permanent	341
“ Of Fillings	2,985
“ Temporary	948
“ Permanent	2,037
“ Treatments	7,002

I think this speaks for itself and that it is a proof that the Department of Health has taken hold of this work in earnest, are doing more than we could expect of them, when you consider what they had to contend with, new men to break in, delays in equipment, etc. Yet with all this they have stuck to it, systematically and consistently, have demanded results and have obtained them. Too much credit cannot be given to Dr. Lederle, Health Commissioner, Dr. Josephine Baker and Dr. John J. Cronin, of the Department of Health and Child Hygiene, for the earnest and serious work they have done to make these clinics the success that they are this day. They never relax their vigilance and are hard at work all the time. I am in a position to know whereof I



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speak as I am proud to say, I am one of the operators at the Lawrence Street Clinic.

Right here a word to you younger men. Avail yourselves of this opportunity to get into this clinic work. It is a great chance for you. Under capable direction, well advised, properly conducted clinic work is certainly a great opportunity to increase your efficiency, broaden your views and make you more and more competent dentists. The Supervisor of Clinics, Dr. Carney, has visiting supervision. Miss Fowler is in direct charge of the Lawrence Street Clinic, our work is all done by appointments made weeks before. Sterilization of instruments occurs after every patient leaves the chair. Every care is taken of the patients by trained nurses. On the whole it makes it very desirable to practice your profession under such excellent conditions. I close by again urging you men of the society to offer your services to the Department of Health.

A. FREEMAN FOOTE,
Chairman Dispensary Committee.

Report of the Committee on Public Health and Education, 1912-12.

(Read at April meeting and ordered published.)

The activities of your committee during the past year have been very fruitful, and the benefits accruing from the educational campaign conducted are evident from the many letters of appreciation received by the chairman. Our lecture system, as now established, is working so effectively that it is being used by many other districts as well as some State societies as a model for their operations. We have supplied the International Committee of the Y. M. C. A. with duplicates of our lantern slides and lectures, outlines that are being used in twelve different parts of the United States, so the secretary reports. At the State Society, in May, we are to show our system at Albany, and the lantern slides, motion picture film and other accessories in conjunction with the exhibit.

The motion picture film, although in our possession but six weeks' time, has been shown to over 3,000 persons, and is in great demand in the various educational centers. The committee wishes to thank the members, who by their kind subscriptions, made this film possible. (It will be shown at the close of the meeting to-night).

After several years' persistent effort on the part of successive chairmen of this committee, the City Superintendent of Schools, has at last



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consented to include Mouth Hygiene in the public school curriculum. On November 21, 1912, the following resolution was adopted by the Board of Superintendents:

“RESOLVED, That the Second District Dental Society, State of New York, be informed that in the new syllabus in hygiene very considerable attention will be given to the subject of Mouth Hygiene, and thus the pupils in our schools will get instruction direct from the teachers in this subject.”

We were later asked to assist in the preparation of the syllabus in the following letter:

January 8, 1913.

DR. ALBERT H. STEVENSON,
Chairman, Committee on Public Health and Education,
Second District Dental Society,
1202 Cortelyou Rd., Brooklyn.

DEAR SIR:

In reply to your letter of December 28th I beg to state that our Director of Physical Training, Dr. C. Ward Crampton, has been instructed to confer with Dr. Ottolengui in the matter of the preparation of the new course of study in hygiene. I beg to thank you and the society which you represent for your constructive interest in the health of the public school children.

Very truly yours,

WM. H. MAXWELL,
City Superintendent of Schools.

The chairman of this committee and Dr. Ottolengui accordingly collaborated with Dr. Crampton, and we have arranged for ample presentation of Mouth Hygiene to the children, including the Tooth Brush Drill. When we consider the number of children in the schools of New York City (now nearing the million mark), the importance of this victory can be appreciated.

To facilitate the lecture work the two most important branches, the hospital lectures and the Mothers' Club Talks were arranged by Drs. Croscup and Watson respectively. Their reports follow:

DR. A. H. STEVENSON, Chairman,
Committee on Public Health and Education.

MY DEAR DOCTOR:

In order to arrange a series of lectures on Mouth Hygiene to be given to the nurses in the hospitals of Brooklyn, I opened correspondence with the superintendents of twenty hospitals and sanitoriums located

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within the Second District, receiving favorable replies from the majority, and lectures arranged for eleven institutions, namely, Kings County, Brooklyn, Williamsburg, Norwegian, Long Island, St. Johns, German, Methodist Episcopal, Bushwick-Swedish and Cumberland Street.

Nine of these have already been given, and two yet to be delivered.

The following members of the lecture staff of the Second District conducted these lectures: Drs. A. H. Stevenson, H. C. Croscup, A. M. Nodine, J. H. Hanning, C. M. Norcom, H. C. Ferris, Ellison Hillyer, T. P. Hyatt, J. O. Peterson and B. F. Shea.

Just double the number of hospitals covered over last year. Many letters of commendation were received from the hospital authorities following the lectures, and some requests for additional lectures have been received. The nurses are, in many instances, overworked, and it was found desirable not to exceed one hour in the talks. It is estimated that the number of nurses hearing these lectures was 600. The nurses' lecture rooms are poorly equipped, few have facilities for lantern slides, or even blackboards for illustrations.

The nurses have little knowledge of mouth hygiene, but show a keen desire to learn, and there is no doubt that these lectures in the hospitals and kindred institutions are bearing fruit, and I consider this an important field for work in the future.

Respectfully submitted,

April 3, 1913.

H. C. CROSCUP.

Notices were sent to the mothers' clubs in the public schools and churches, parents' associations and kindergartens.

Twenty-seven lectures were given by the lecturers and about seven-hundred mothers were reached in this way.

The use of blackboards was found advantageous to illustrate the talks. The lecture outlines for mothers' clubs were followed, emphasizing the need of preventive measures in regard to caries and malocclusion. The importance of saving the temporary teeth was also pointed out, because many dentists fail to properly instruct their patients and even neglect to fill temporary teeth when they should be retained for a number of years.

The lecturers were the following:

Dr. A. P. Boudin, Dr. R. H. Clark, Dr. G. C. Douglass, Dr. M. R. Ewald, Dr. C. A. Gomer, Dr. B. L. Hoch, Dr. A. M. Nodine, Dr. C. M. Norcom, Dr. J. O. Peterson, Dr. A. Ritt, Dr. W. H. Rogers, Dr. S. Shapiro, Dr. A. H. Stevenson, Dr. W. S. Watson.

Respectfully submitted,

WALTER S. WATSON.

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Your committee suggests that during the coming year a paper be read on the "Oral Cavity as a Source of Infection and Distribution," or some similar subject, members of the Kings County Medical Society being invited to attend and participate in the discussion. Such a paper would arouse considerable interest and assist the succeeding committee materially. It is sad, but true, that some of the members of our profession do not appreciate the importance of the mouth as factor in disease. With such ignorance or indifference in our own ranks, we cannot expect to convince others. Judging from the questions asked at some of our public meetings, patients of many reputable dentists learn little or nothing from them of Mouth Hygiene. The practicing dentist as an educational factor in his own office and community is worth considering.

The educational work became so engrossing that we requested the appointment of a subcommittee to take charge of the practical test among the children selected by the Department of Health. Dr. Holbrooke has had charge of this work, and he reports 116 children treated or under treatment. He has the records of the school attendance, class standing, and health record of each, under close observation, and his final report at the end of the period desired for the test (one year) will doubtless be a revelation to all. He has had a difficult tedious task, with many discouragements, and deserves great credit for what he has accomplished.

Respectfully submitted,

Com. on Public Health and Education,

ALBERT H. STEVENSON,
Chairman.

Lecture Schedule, 1912-1913.

OCTOBER

- 24th—Public School No. 54, Walworth St., near Myrtle Ave.
(Mothers' Club) Dr. Anna P. Boudin.
29th—Public School No. 33, Heyward St., near Broadway.
(Parents' Association) Dr. B. L. Hoch.
29th—Public School No. 43, Boerum St. and Manhattan Ave.
(Parents' Meeting) Dr. W. S. Watson.
30th—Public School No. 45, Lafayette and Classon Aves.
(Children) Dr. R. H. Clark.

NOVEMBER

- 6th—Public School No. 124, Fourth Ave., bet. 13th and 14th Sts.
(Mothers' Club) Dr. Martha R. Ewald.
12th—Public School No. 134, 18th Ave. and Ocean Parkway.
(Mothers' Club) Dr. A. H. Stevenson.
12th—Public School No. 43, Boerum St. and Manhattan Ave.
(Parents' Meeting) Dr. W. H. Rogers.

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- 12th—Public School No. 129, Sutter Ave., Vermont and Wyona Sts.
(Mothers' Club) Dr. A. Ritt.
- 13th—Public School No. 84, Glenmore and Stone Aves.
(Mothers' Club) Dr. C. M. Norcom.
- 20th—Public School No. 127, 7th Ave., bet. 78th and 79th Sts.
(Mothers' Club) Dr. W. S. Watson.
- 20th—Public School No. 71, Heyward St., near Lee Ave.
(Mothers' Club) Dr. G. A. Gomer.
- 8th—Bedford Y. M. C. A., Bedford Ave. and Monroe St.
(Public) Dr. A. H. Stevenson.
- 21st—Brooklyn Hospital, Raymond St. and DeKalb Ave.
(Nurses) Dr. J. H. Hanning.
- 21st—Public School No. 146, 18th and 19th Sts., bet. 6th and 7th Aves.
(Mothers' Club) Dr. W. S. Watson.
- 21st—Public School No. 65, Richmond St. and Ridgewood Ave.
(Mothers' Club) Dr. S. Shapiro.
- 26th—Williamsburg Hospital, 342 Bedford Ave.
(Nurses) Dr. C. M. Norcom.

DECEMBER

- 4th—School Settlement, 148 Jackson St.
(Public) Dr. C. M. Norcom.
- 10th—Public School No. 152, Glenwood Rd. and E. 17th St.
(Parents' Association) Dr. W. S. Watson.
- 12th—Norwegian Hospital.
(Nurses) Dr. H. C. Croscup.
- 12th—Long Island Hospital.
(Nurses) Dr. H. C. Ferris.
- 13th—Public School No. 34, New York City.
(Mothers' Club) Dr. A. M. Nodine.
- 13th—Madison Ave. Presb. Church, cor. 73d St., New York City.
(Mothers' Club) Dr. A. M. Nodine.
- 31st—Central Y. M. C. A., Fulton St.
(Public) Dr. A. H. Stevenson.

JANUARY

- 9th—Evening School No. 156, Sutter Ave. and Barrett St.
(Public) Dr. S. S. Shapiro.
- 9th—Public School No. 88, Fresh Pond Rd. and Elm Ave.
(Mothers' Club) Dr. W. S. Watson.
- 10th—Greenpoint Y. M. C. A., Lorimer and Meserole Ave.
(Public) Dr. H. C. Croscup.
- 16th—Public School No. 130, Ocean Parkway and Hamilton Ave.
(Mothers' Club) Dr. C. M. Norcom.

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- 16th—St. John's Hospital, 162 Halsey St.
(Nurses) Dr. E. Hillyer.
- 22d—German Hospital, St. Nicholas Ave.
(Nurses) Dr. A. H. Stevenson.
- 22d—Strong Place Baptist Church, Strong Place and Degraw St.
(Mothers' Club) Dr. W. S. Watson.
- 23d—Public School No. 45, Lafayette Ave., near Classon Ave.
(Mothers' Club) Dr. R. H. Clark.
- 24th—Methodist Episcopal Hospital, Sixth St.
(Nurses) Dr. H. C. Croscup.
- 30th—Public School No. 32, Hoyt and President Sts.
(Mothers' Club) Dr. W. S. Watson.

FEBRUARY

- 6th—Public School No. 66, Union Place and Tulip St.
(Mothers' Club) Dr. W. S. Watson.
- 20th—Public School No. 85, Evergreen Ave. and Eldert St.
(Mothers' Club) Dr. W. S. Watson.

MARCH

- 6th—Public School No. 104, 92d St. and 5th Ave.
(Mothers' Club) Dr. W. S. Watson.
- 7th—Maxwell Memorial Industrial School, 23 Fourth St.
(Mothers' Club) Dr. G. C. Douglass.
- 12th—Public School No. 66, Sutter Ave. and Watkins St.
(Mothers' Club) Dr. W. S. Watson.
- 26th—Meredith Kindergarten, Park and Marcy Aves.
(Mothers' Club) Dr. W. S. Watson.

APRIL

- 2d—Public School No. 136, Fourth Ave., 40th and 41st Sts.
(Mothers' Club) Dr. W. S. Watson.
- State Department of Health.
(Public) (3 Lectures) Dr. T. P. Hyatt.

MAY

- 5th—Swedish Hospital, Rogers Ave.
(Nurses) Dr. J. O. Peterson.
- 27th—Bushwick Hospital, 2 Howard Ave.
(Nurses) Dr. T. P. Hyatt.
- Public School No. 127, 7th Ave. and 78th St.
(Children) Dr. T. P. Hyatt.
- Public School No. 93, New York Ave. and Herkimer St.
(Children) Dr. T. P. Hyatt.
- Cumberland Hospital, 109 Cumberland St.
(Nurses) Dr. B. F. Shea.

Central Dental Association of Northern New Jersey.

The meeting of the Central Dental Association of Northern New Jersey was held at Achtel-Stetter's in Newark on the evening of May 19, 1913. A goodly company partook of the dinner provided in advance of the meeting, and a number of others arrived later, so that the attendance was one of the largest of the season.

Routine business having been conducted, Dr. W. D. Tracy, of New York City, read the paper of the evening, entitled "Gold and Porcelain Inlays by the Indirect Method," after which the following discussion ensued:

Discussion of Dr. Tracy's Paper.

President Russy. I believe that I am justified in stating that it is not often that we are favored with a paper of so much value to the profession at large; it is of so much value and so full of points of interest that it merits a thorough discussion in which all should take part.

**Dr. Geo. Evans,
New York.** I did not come here to discuss this paper. I came more, like many of you possibly, to get a few more points on the subject of which the paper deals, knowing that Dr. Tracy is an expert in this line in the taking of impressions and working by what is known as the indirect method. I work myself a good deal on the lines he does. I have learned some of that through practice and also from the instruction that I have received in one of the classes of the First District Society. These study classes must be attended for a full term to be appreciated. Dr. Tracy is chairman of this particular section. Dr. Tracy's method of taking impressions is pretty nearly what I have practiced, with a little change in my method as to the shape of the impression cup, but I will not trespass by introducing any of my own technique.

I recognize that the inlay is an unknown quantity in our practice, and I cannot take to inlays with the same enthusiasm as some of the younger men; I cannot set aside my gold foil and amalgam for many cavities and give preference to inlays. Mind you, I have been practising dentistry for about fifty years. I see gold fillings in my office almost every day, the same having been put in a number of years ago, and they are just as perfect as though they had been done to-day.

We have many eras in our profession. We had the era of rubber work; then the era of crowns—where we crowned teeth that could have been filled, that is, many of us did. We have gone from one step to another, and now we come to the inlay, and I think we are overdoing

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it. In many cases we can fill a cavity with gold in about one hour's time and obtain the same result.

Talking of gold fillings, I had a lady in my office the other day who had in her mouth gold fillings as perfect as though they were put in a few weeks ago—looked like pieces of gold melted into these teeth. No inlay would have equaled these gold fillings. If you have a cavity that will take only about an hour to fill, I cannot see the advantage of making an inlay. I can take such a cavity and prepare it and fill it in about one hour; with an inlay you have to spend more time, and if the same is not perfect you have to make another engagement and your patient must come back to your office because you cannot finish, and very often you have to make still another engagement, unless you are a first-class operator.

I have seen many inlays in patients coming to my office from other dentists, and it seemed to me that the same results could have been obtained by filling, because of the fact that the inlays in very few cases seem to fit.

Dr. Strausberg. All of those who have seen the specimens presented by Dr. Tracy cannot but admire the thoroughness of the same.

Dr. Tracy tells us how simple it is, and while it is simple to Dr. Tracy (he could do just as good work with any other method), to the average man it is not as simple as it appears to be. I can take fifty students, thirty-five of them will make fairly good inlays in the die of amalgam, but let them take it from the die and place it in the cavity and they fail. It is very difficult to take a perfect impression of the cavity, and to get good results you must have a perfect impression.

I do not wish it to be understood that I have any prejudice against the indirect method, but I think that everyone should try both methods and see by which method the best results are obtained, because it is our duty to adopt that method by which our patients will receive the best service.

**Dr. Rutherford,
New York.** I used to be acquainted with an extremely accurate man, who was formerly an engraver. He could not get a good impression with compound. There is no material that is as accurate as wax.

Hard wax takes a good impression, but when removed from the mouth it yields. He used a small amount of sticky wax over the compound. This is a very good impression method. Sticky wax actually stays where it is put.

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**Dr. Sutphen,
Newark.**

I hardly feel able to discuss the indirect method, because I have not used it in the making of gold inlays; I have used it entirely for porcelain. I imagine from the explanation of the paper that it would be quite an improvement in many cases over the direct, because sometimes it is very difficult to carve the pattern in the mouth; you can get a good impression, but not a good wax inlay. This appeals to me as quite simple, and I think it worthy of very serious consideration and trial, but I think that a method of this kind would be very much more successful if we do a little experimenting out of the mouth before we do it in the mouth. Some porcelain inlays have many faults. It might be well to do some of this work in the laboratory and compare results. I have not been practicing quite as many years as Dr. Evans, but I do think that for some cavities there is no advantage in using gold inlays.

I do not think it fair to discuss in detail a paper of this kind which you have heard for the first time.

I am satisfied that the gold inlay has come to stay; it is a great boon to our patients and valuable to ourselves; it will preserve teeth which otherwise would be lost. I think that the society should be congratulated for the presentation of such an able paper.

Dr. Rood.

I am very much surprised that Dr. Tracy should come here to-night and talk to us on inlays. While at college, I suppose I should not say he did the best work, because that would hurt Dr. Kussy's feelings, but Dr. Tracy did beautiful work in college; his inlays to-night are a fair example. I wish that I could do as beautiful work; the carving particularly is perfect; that is something that I have never been able to do to my satisfaction.

I had the pleasure of taking Dr. Van Woert's inlay lecture course in New York City, and I found that I could get very good results; but I was spending night after night in my laboratory making amalgam dies, and it seemed to me that I was spending too much time. You should have assistants in your office, as Dr. Tracy has, who can do all of this detail work; then I would say by all means work by the indirect method. Dr. Tracy does not do this beautiful carving; his assistant does that, and she does beautiful work. As far as I was concerned, I had to do it all myself.

I think that the great trouble with most of us is in the preparation of the cavity and the taking of the impression. If that is not done perfectly you cannot expect a perfect inlay. I have gone back to the direct method, and I find that I save many hours in the laboratory. The great advantage of the indirect method to the dentists in the rural districts,

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like myself, is that if we make a fault we have something to fall back on; we do not have to make another engagement with our patient. But unless you have an assistant I would advise the direct method as being a time saver.

Dr. Tracy has not told us all the advantages of the indirect method over the direct, in view of the fact that you can better control the movement of the wax in the indirect.

As to articulation, whether you use the direct or the indirect, the result can only be perfected later, because of the fact that these inlays must have a chance to seat.

Make a wax impression in the mouth, and we will assume that it is perfect and take it out in the room, and you will have your trouble in about ten or fifteen minutes; you have to contend with shrinkage and casting errors, and sometimes you have expansion to reduce. You must contend with all these, more in the direct than in the indirect. Do most of the work in the die and very little in the mouth. Then if the inlay does not seat you will have to destroy it.

Remove the wax pattern from body temperature to room temperature; you can use a special wax in the amalgam die that you cannot use in the mouth, thus reducing the contraction.

Some of us forget the fact that the materials have some life in them; they are not stable. The risk of error is a lot smaller when taking impressions with compound in the indirect method.

I think that where the cavity extends below the gum margin, Dr. Tracy's method would be the best; but where you have six or seven different steps in a method, as in this, there is a greater chance for mistakes than in the direct, and the latter also saves a great deal of time. I had supposed that the indirect method of making gold inlays was a great time-saver, but with all the necessary steps, whether with assistants in the laboratory or by a man doing all his own work, Dr. Tracy's method, I think, would be the most advantageous where the cavity extends below the gum. But in most cases you can save time and do just as good work with the direct method.

I have been very much pleased with the discussion; in fact, you have dealt very kindly with the proposition. I naturally expected that some would differ with me, and that would add interest to the evening.

In replying first to some of the things that have been said by Dr. Evans, I do not want any man to get the idea that I have gone crazy over gold inlays. I still use gold foil fillings, but the inlay has its place

A decorative flourish with symmetrical scrollwork and floral motifs framing the text.

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and advantages. I think that the inlay is a valuable method of saving teeth and that it has come to stay.

In examining patients from year to year we see porcelain inlays that were put in by ourselves years ago and which are still saving the teeth.

Dr. Evans spoke about making a filling in one hour, but in a great number of our cases we have fillings where it is necessary to prepare two cavities and we can do all the detail at the chair, and at the next sitting in thirty minutes finish it. It is my contention that a man who can do fine work in gold fillings can do good work by this method. I have not abandoned the gold foil filling where I think that I can do better for my patient than by this method.

Speaking about the time required to prepare these cavities, we can prepare them more quickly than for gold foil fillings. Someone spoke of the element of error, and said that you cannot finish inlays at the same sitting. I never finish them at any other time.

I did not say that you could not get proper contact points with amalgam or porcelain.

Dr. Strausberg I knew would differ with me, because I had the pleasure of hearing him in New York.

I have always felt that you could do just as good by the indirect as by the direct; we feel that we can do better in my office and do a greater volume of work, where you have a quantity of work to do and have taken the time and trouble to train someone to do certain details of the technique for you.

Dr. Sutphen stated that he uses the indirect method with porcelain and obtains satisfactory results; therefore I think that he should go a step further and try it with gold inlays.

I wish to thank Dr. Rood for his eulogies on my work. He spoke of having given up the indirect method because of the fact that he does not feel that it can be used to good advantage where a man has to do all of this work himself. I believe those of you who are doing work by the direct method would find it to your advantage if you would train a young lady or young man to do this work. The inlays would be returned to you finely finished and ready to set.

Dr. Rutherford spoke of taking impression with sticky wax. In my opinion, that might be some advantage. A more perfect impression might be obtained sometimes than you could get with the compound.

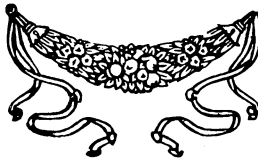
The last speaker spoke about inlays being such a time and labor-saver to the profession. I never thought that I could make an inlay as easily as I could a gold foil filling. I think the man that looks upon the inlay as a time and labor-saving method is mistaken. The reason why I have used the gold inlay is because of the fact that it is a tooth-saver,

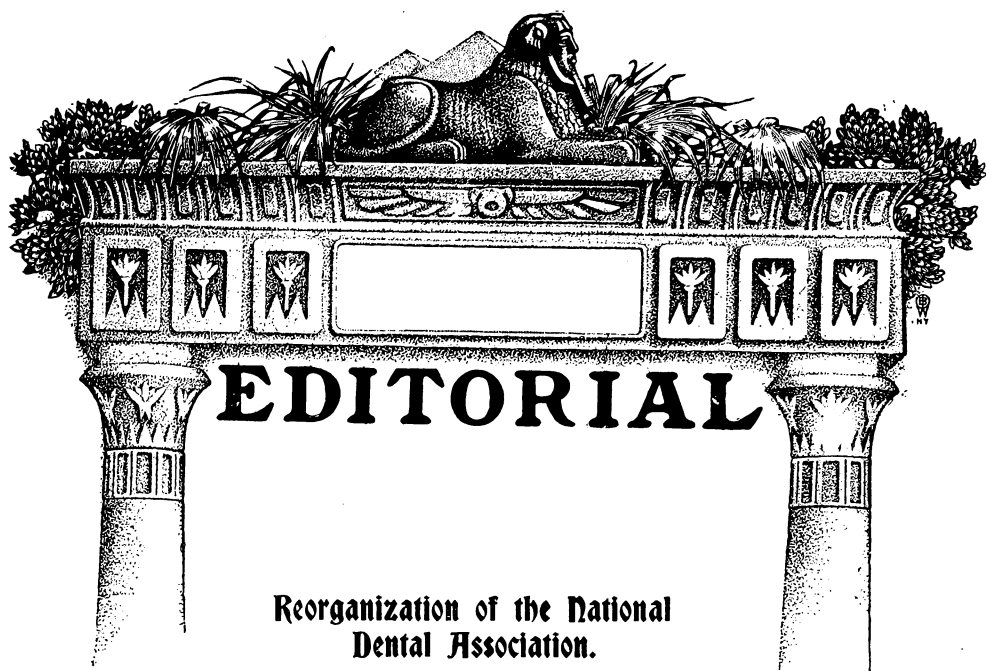
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not a time-saver. I think that the man who would acquire proficiency in the making of cast gold inlays will save a great many teeth. He also spoke to the effect that the indirect method is best where the cavity extends below the gum. If it is good below the gum, why is it not good when the margins are all above the gum?

I will admit that the indirect method is better adapted to the practice where there is a trained office assistant. Dr. Rood exposed me when he said that I did not do this beautiful carving. The inlays are all carved in my laboratory under my personal supervision. My assistants have all been trained and developed by myself, but the lady who does this work in my office is a man.

We all know that one of the marks of wisdom is the willingness of the people to give up an excellent thing for a better one; that is my reason for adopting the indirect method for making cast gold inlays.





Reorganization of the National Dental Association.

The long contemplated reorganization of the National Dental Association was finally and successfully completed at the recent meeting in Kansas City, and the dental profession of this country, and we may say of the world, is to be congratulated. With a larger and more representative body, the units of which will be afforded an opportunity for concerted and harmonious effort, progress must be stimulated. Of course, the mere banding together of a multitude of men does not necessarily produce a successful army, but if the leaders comprehend the value and meaning of numbers, and if they work for the common weal rather than for individual aggrandizement the campaign must redound to the credit of all.

A short week ago the National Dental Association of this country had a membership smaller than that of several local dental societies; something less than one thousand. To-day it is the largest dental organization in the world, with over twelve thousand members enrolled, with several States yet to be heard from, and good prospect of having two or three thousand more names added to the lists.

At last, then, the United States has a dental society of which it may be proud. How this has come about now ceases to be of consequence.

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It is a part of history, but it is past history. Of the differences, antagonisms, disputes and delays we can afford to be silent. The one big, important, imposing item of news is that all obstacles have been swept aside. That ever zealous settler of conflicts, General Compromise, has brought harmony where a few had predicted chaos, and the grand reorganization is an accomplished fact. The dream of years has been brought to bountiful fruition; opportunity is knocking at our doors. Let those in command beware lest we overlook the call, for upon the shoulders of a comparative few men rests a grave responsibility. The enlarged association is but as clay in the hands of the potter; let the potter have a care in his moulding, lest the finished piece carry permanent records of personal ambitions where naught but unselfish effort should prevail.

The writer cannot but feel that the men elected to high places will all prove deserving of their preferment, and that they will work together to perpetuate the new association and mould it into a homogeneously working, powerful machine, which shall unceasingly produce results which shall be in the interest of humanity.

First Officers of the Reorganized National Association.

The following officers were elected: President, Dr. Homer C. Brown, Columbus, Ohio; First Vice-President, Dr. Chas. C. Allen, Kansas City, Mo.; Second Vice-President, Dr. M. L. Rhein, New York City; Third Vice-President, Dr. H. H. Johnson, Macon, Ga.; General Secretary, Dr. Otto U. King, Huntington, Iowa, and Treasurer, Dr. H. B. McFadden, Philadelphia, Pa.

The first Board of Trustees include the following: Dr. H. J. Burkhart, Dr. Thos. F. Hinman, Dr. J. P. Buckley, Dr. Thomas B. Hartzell, Dr. E. R. Warner, Dr. Clarence J. Grieves, Dr. A. R. Melendy, Dr. Frank L. Platt, and Dr. C. L. White.

The First House of Delegates.

For a time it seemed that there might be difficulty in convening the first House of Delegates, but after due discussion a plan was adopted which was satisfactory to all. Had the constitution been followed strictly, no fairly representative number of delegates could have been seated, the rule being that dues must have been paid at least thirty days prior to the annual meeting. But the constitution likewise declares that, regardless of dues, each constituent society shall be entitled to one



delegate, and in this fashion the first House of Delegates was made up, thirty-two States and the U. S. Army Dental Corps each having one delegate. All other delegates which had been duly elected by their States, however, were recognized, at least to the extent that all committees which, to accord with the by-laws, must be selected from the House of Delegates, will be chosen from this larger total of delegates.

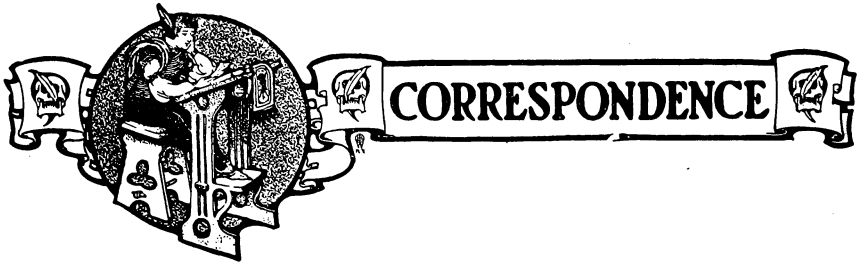
**Two New
Adjuncts to the
Association.**

Two other important steps were taken. One was the organization of a Foundation for Scientific Research, having special reference to dental problems. Too much praise cannot be given to Dr. Weston A. Price for his work upon the committee which had this matter in charge, and it is due to the efforts of Dr. Price and his fellow workers that it was possible for the National Dental Association to lend its name and prestige to this great movement. Fuller particulars will be found elsewhere in this issue.

The second important addition to the National is a section to be composed of presidents, vice-presidents, secretaries and treasurers of constituent State societies. This idea was the conception of Dr. Lawrence, and the first meeting of such a body promised to prove so beneficial by affording opportunity to discuss topics of common interest to all State societies that the House of Delegates was easily persuaded to expand the scheme of the organization so as to include a section of this character.

Good Wishes.

Thus the National Dental Association of the United States of America is well built, well launched, well manned and competently officered. May she enjoy one continuously successful voyage on the sea of prosperity and arrive safely into the final port of Progress.



National Dental Scientific Research and Foundation Commission.

The success attained by the Scientific Foundation Fund Committee in the securing of money for a Foundation Fund for Research and of the free use of many thoroughly equipped research laboratories was so great that the House of Delegates of the National Dental Association, by a unanimous vote, added to its constitution so as to provide for a commission of twenty-five men to immediately place into operation the plan of that committee for supporting and establishing exhaustive research and for the securing of endowments for a National Dental Research Institute.

The constitution as adopted provides that not more than two members of the commission can reside in any one State. The commission and its officers as elected were: Weston A. Price, Cleveland, Ohio, Chairman; Thomas P. Hinman, Atlanta, Ga., Vice-Chairman; Clarence J. Grieves, Baltimore, Md.; Secretary-Treasurer, John V. Conzett, Dubuque, member Executive Committee; Eugene R. Warner, Denver, Colorado, member Executive Committee; Edward C. Kirk, Philadelphia, Pa.; William Carr, New York City; Truman W. Brophy, Chicago, Ill.; G. V. Black, Chicago, Ill.; M. H. Fletcher, Cincinnati, O.; Thos. P. Hartzell, Minneapolis, Minn.; Arthur R. Melendy, Knoxville, Tenn.; Edward S. Gaylord, New Haven, Conn.; Henry C. Ferris, New York City, N. Y.; Chas. C. Allen, Kansas, Mo.; Frank O. Heterick, Ottawa, Kansas; Marcus L. Ward, Ann Arbor, Mich.; Frank L. Platt, San Francisco, Cal.; C. S. Van Horn, Bloomsburgh, Pa.; R. H. Volland, Iowa City, Iowa; C. M. McCauley, Abilene, Texas; Geo. E. Hunt, Indianapolis, Ind.; Eugene Smith, Boston, Mass.; J. E. Chase, Ocala, Fla.; Samuel H. McAfee, New Orleans, La. Ex-officio members: Homer C. Brown, Columbus, O., President of National Dental Association; Otto U. King, Indianapolis, Ind., Secretary National Association. (This commission

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contains five national ex-presidents and the present president and five journal editors.)

Plan of Organization.

The plan developed by the Foundation Committee was adopted, viz: to raise funds from three distinct sources. First, from the members of the dental profession by their each giving, as nearly universally as possible, a voluntary contribution each year for five years to start the work. This becomes necessary both for immediate funds and for the essential endorsement of the work. Second, a popular fund from the laity to be obtained largely by the activity of the members of the dental profession. Third, an endowment fund to make the work permanent.

The Foundation Committee has already secured contributions exceeding \$15,000 in signed individual pledges, covering a period of five years, or \$3,000 per year, from the five societies to which the chairman was able to go and present the matter. These were as follows: Cincinnati, 2,767; Columbus, 1,200; Toledo, \$500; Cleveland, \$4 010; University of Iowa Dental Alumni, 500; St. Louis, \$500; Louisville College Dental Alumni, \$500; Indiana State Dental Society, \$800; Maryland and District of Columbia Societies, \$700; Pennsylvania State and Susquehanna Societies, \$782; contributions received at the Kansas City National meeting, \$2,600; miscellaneous, \$500; total, \$15,359. It is expected that each State will provide in voluntary contributions an amount equal to five times the number of dentists in the State. On this basis Ohio, with 2,400 dentists, has already provided over \$9,000 of her \$12,000 proportion.

- Work to be Begun Immediately,

The commission has decided that the need for immediately assisting dental and oral research is so great that they will begin work at once by providing technicians to make possible a much larger output from the labors of some of the men who are already voluntarily devoting a part of their time in dental researches and doing excellent work. This will be done up to the amount of money already available. These contracts, for the present, will be limited to a total of \$4,000 for one year. This will be used to engage expert assistants for those who are doing excellent work, and with available good laboratory equipment, in the following subjects: Systemic Infections from Dental Origin, Pyorrhea and Kindred Affections, The Etiology of Caries, Salivary Analysis, Etiology of Erosion, Dental Amalgams, Metallurgy for Substitutes for Platinum, etc., and the Relation of Foods to Defective Tooth Structure.

Ten expert laboratory assistants or technicians are greatly needed at once, and the \$4,000 available now will only permit of four or five.

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It is greatly desired that the members of the profession should arrange to have the subscription plan thoroughly organized at once in their respective communities, so that the others can be placed this fall. It will require an average of \$5 per year per active member of dental societies to make up for those who cannot be reached. The subscriptions are running from one to one hundred dollars per year for five years. This beginning is only emergency preliminary work, and the commission will engage the part or entire time of some of the most expert and competent research workers as soon as the funds can be obtained. The chairman has already secured for the National Dental Association privileges for research in the following laboratories and institutions:

**Laboratories
Available.**

The Cushing Laboratory for Pathological Research, Cleveland; Metallurgical Research Laboratory, Case School of Applied Science, Cleveland; Iowa State University Research Laboratories; Michigan State University Research Laboratories; Hygienic Research Laboratory; United States Health Department, Washington; Bellevue Hospital Research Laboratory, New York City; Cincinnati Hospital Research Laboratory, Park Davis Co. Research Laboratory, Detroit; University of Chicago, and several other competent institutions.

There are also several men who have the true research spirit who have been found to be available and whose hearts are so engrossed in that work that they are now devoting much time and energy to that work without compensation, but who have to struggle for the necessities of life in an all-day dental practice. The commission will place some of these men in some of these available equipped laboratories as soon as funds can be secured.

We do not present this as simply a professional duty, but as a great personal opportunity. We do not ask of you self-sacrifice, but self-realization, for it is our privilege by supporting this work to help to emancipate society from the most universal malady and also the one which causes more total suffering directly and indirectly than any other.

Literature and subscription blanks and directions will be furnished by writing the chairman,

WESTON A. PRICE,
10406 Euclid Avenue, Cleveland.



Mouth Hygiene.

A Special Feature of the Fourth International Congress on School Hygiene Including Plans of Organization and Co-operation.

By W. G. EBERSOLE, M.D., D.D.S., Sec'y-Treas. National Mouth Hygiene Assn.

The dental profession of the world has been honored by an invitation from Dr. Thomas A. Storey, secretary-general of the Fourth International Congress on School Hygiene, which meets in Buffalo, August 25 to 30, 1913, to participate in the most elaborate effort that has yet been made toward placing school hygiene before the world in its true relation to the health, strength and working efficiency of the human race.

This is one of the most important opportunities that has come to the dental profession in its history for the purpose of presenting the various phases of mouth hygiene in their true relation to hygiene in general.

At this meeting will be assembled the largest number of people that have ever gathered in this country for the purpose of considering those questions which deal with school hygiene. Not only the leading educators and school officials of this country, but of the world will be assembled on this occasion.

This means that every State in the Union will be represented by educational people and it is therefore highly important that every section of the country that is doing anything along the mouth hygiene line be represented in connection with the scientific exhibit dealing with the various phases of school hygiene.

A large amount of space has been set aside to be devoted exclusively to the exhibition of material dealing with the various phases of mouth hygiene. It behooves every dentist who is interested in the mouth hygiene movement to see that his State, city or town has some sort of a display in connection with this work.

The organization of the Mouth Hygiene Literary and Scientific Exhibit part of the program has been placed in charge of the writer of this article. An extensive literary program has been practically completed for that occasion.

That the mouth hygiene exhibit may be in keeping with the importance that mouth hygiene bears to school hygiene in general, I am extending an invitation to the Oral Hygiene Committee of every dental organization of the country to participate in this exhibit. I am making an urgent appeal to each committee to see that its section of the country is represented by some sort of exhibit, setting forth either what they are doing or planning to do in that section.

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Where a committee has nothing else to offer I would suggest that they prepare a chart or a large card, preferably black background with white lettering, and framed in a black frame about an inch in width. The lettering on this card should be large enough to read at a distance of twenty-five or thirty feet.

In organizing this work I am asking the oral or mouth hygiene committees of the State societies to assume responsibility for the State exhibits and requesting all other dental organizations to co-operate with their State committee in making a State exhibit, but requesting that each individual committee present its exhibit as a component part of the State exhibit, but retaining its distinctive feature, the State exhibits to become part of the national exhibit, each State becoming a component part of the national exhibit, but retaining its individuality. The State exhibits will be arranged in alphabetical order so that the guests from any State will have no difficulty in ascertaining what is being done in that particular State.

The chairmen of the various State organizations constitute a national committee, this committee to include the Oral Hygiene Committee of the National Dental Association and the chairman of the various State committees appointed by the National Mouth Hygiene Association. The chairman of the National Dental Association's Committee will be the executive officer of this national committee.

The National Mouth Hygiene Association has agreed to co-operate with the Congress to the extent of making its annual literary program a part of the Congress's literary program and is organizing its membership in the various States and cities along the same lines suggested for the organized dental profession.

In appointing its committees on exhibits it has followed out the policy of appointing those of its members who are known to be members of the State or local Oral or Mouth Hygiene committees as its representatives. The National Mouth Hygiene Association will also appoint one of its representatives to co-operate with Dr. Gram at Buffalo in arranging for exhibits.

We wish to call the attention of the profession to the fact that this is a tremendous undertaking on the part of the writer to organize this work along the lines suggested.

I do not have at my command the names of the committeemen of the various dental societies of the country and am therefore taking this means of notifying these committees of the part that they are expected to take in this work requesting that they communicate with me at once indicating their willingness to co-operate and the style of exhibit that they expect to make.

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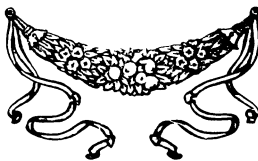
I wish to say to the Oral Hygiene committees that if they are contemplating any work along the mouth hygiene lines they should have something in connection with the exhibit to indicate what they are doing or what they contemplate doing in order that the educational people from their sections of the country may find that they have a live committee in existence.

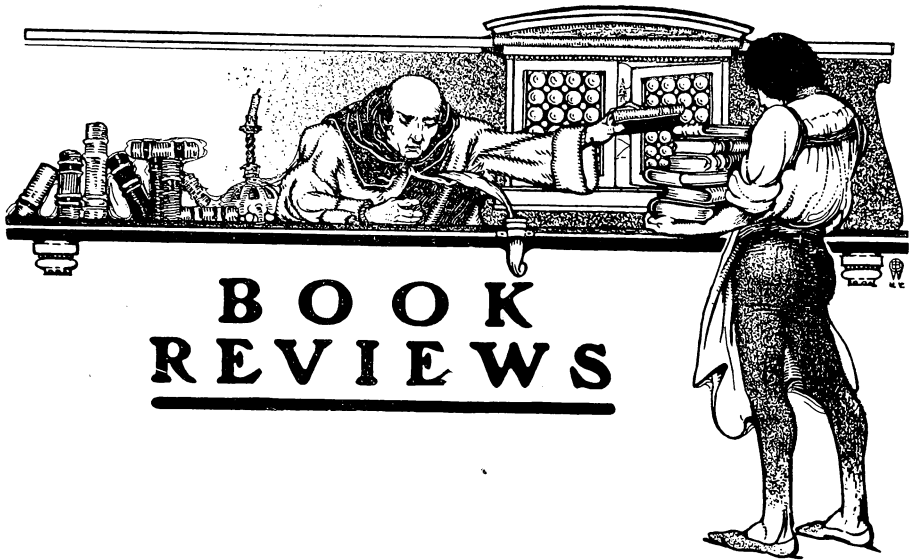
We would like to suggest to the State committees that they secure a large map of the State and indicate by means of various colored tacks the places and kinds of work being done.

I wish to impress upon the various State committees the importance of having their Mouth Hygiene Exhibit, because of the fact that those in charge of this work expect to make a presentation of mouth hygiene part of the program, which will be so impressive that every person who attends the Congress will be deeply interested in the mouth hygiene work. To have the exhibits split up and made part of the general hygiene exhibits would do much to lessen the impressiveness of the Mouth Hygiene Exhibit.

W. G. EBERSOLE.

800 Scofield Bldg., Cleveland, Ohio.





An Index of the World's Dental Literature.

By THEO. VON BEUST, D.D.S., Dresden.

Far-seeing promoters of dental learning have long since recognized the value of an index, embracing all dental publications. Few dentists have the privilege of receiving more than four or five dental journals. If we exclude from consideration those connected with dental universities and large libraries we can certainly say, that the former are extremely rare. As a matter of fact, there exist upward of one hundred and fifty purely dental journals, not to speak of the articles related to our profession which appear in medical journals.

Every dentist has a line of work which interests him specially, and seeks and eagerly devours that which other investigators write about his favorite topic. Here is the orthodontist, there is the prophylactist; the former favors the articles on orthodontia, often to the exclusion of all others; for the latter the publications on prophylaxis are of prime interest. In view of the above-mentioned number of periodicals it is a sheer impossibility for the practitioner to glean from this mass of literature that which appeals to him, even if he should have access to all publications. The inevitable result is a loss to the student, for whom the greater part of the contributions touching upon his specialty are lost. A further



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loss is suffered by the author, who took great pains to frame his valuable ideas for readers, the majority of whom will never learn of the existence of his article. A third loss is suffered by the scientist, who finds after devoting weeks or months to a certain subject, that he has been throwing away his time and energy upon explored territory. A further, and by far the greatest loss, is inflicted upon dental science, in which progress is impeded by the inability of the world's dental investigators to remain in communication with one another.

The first attempts, to our knowledge, to establish an index were made in the American Library of Dental Science between 1839 and 1849. Then followed the works of J. O. Coles, who published a list of works on dentistry in 1882. At about the same time Taft and Crowley dedicated their list of books and periodical literature to the profession.

At a meeting of the Institute of Dental Pedagogics in December, 1908, it was decided to establish a classified card index of the leading dental journals and a committee composed of prominent members of the American profession was appointed to inaugurate the initial steps for the accomplishment of this idea. This has since led to the organization of the Dental Index Bureau, which has been fully described in the journals. In Germany an attempt was made by Professor Port, of Heidelberg, whose tabulation was discontinued in 1902. At the Fifth International Congress held in Berlin, 1909, much time was devoted to the discussion of the value of a permanent index, one which could be issued regularly and if possible monthly. This led to the establishment of the index in the "*Ergebnisse der Gesamten Zahnheilkunde*." This index was edited by the well-known author, Dr. Paul de Terra, Zollikon-Zürich. After a short period, however, it was transferred to the *Deutsche Zahnärztliche Zeitung*, where its continuation was prevented by a sudden change in the management. Now it has been given a place in the *Archiv für Zahnheilkunde*, Dresden, a monthly magazine published by the "Society of American D.D.S. practicing in Germany," who will endeavor to do all in their power to supply the necessities for its maintenance and to make the *Archiv* its permanent home. Dr. de Terra, with his exceptional capabilities and large experience, has access to over a hundred purely dental journals and over two hundred medical periodicals. The journals used in the compilation of this index represent all the civilized countries of the globe, to wit: Germany 16 periodicals; Austria 13 (7 German, 4 Hungarian, 1 Bohemian, 1 Polish); Switzerland 2 (1 German, 1 French); Belgium 3, Holland 1, France 11, England 8, Italy 3, Spain 1, Sweden 2, Norway 1, Denmark 1, Russia 4 (3 Russian, 1 Polish); North America 12 (English); South America, 10 Spanish, 1 Portuguese; Australia 1. In the subsequent issues the head-



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ings of the various chapters will be printed in German, English and French, thus making the index useful for those unacquainted with the German language.

There is little doubt that the index, as at present instituted in the *Archiv* with its 300 to 350 subject titles monthly, will meet all the requirements demanded of a serviceable index by the essayists of the Fifth International Dental Congress.





SOCIETY ANNOUNCEMENTS

National Society Meetings.

NATIONAL DENTAL ASSOCIATION, Rochester,
N. Y., July 14, 15, 16, 17, 1914.

AMERICAN SOCIETY OF ORTHODONTISTS, Toronto,
Can., July 9, 10, 11, 1914.

PANAMA-PACIFIC DENTAL CONGRESS, San Fran-
cisco, Calif., 1915.

The Panama-Pacific Dental Congress.

The work of promoting the Panama-Pacific Dental Congress is progressing in a most satisfactory manner and the Committee of Organization is pleased to report that up to date, in thirty-eight States of the United States, executive committees have been appointed to co-operate with it in advancing the interests of the Congress.

Seventeen foreign states and countries and the island possessions of the United States have taken similar action and the appointment of like committees in other states and countries is now pending.

It is hoped that within the next three or four months every state and country in the world, where dental organizations are known to exist, will be represented by an executive committee the duties of which will be to promote an interest in the Congress and secure memberships and contributions to the program.

Instructions defining the duties and authority of these committees will shortly be sent to each of them.

The committee is in almost daily receipt of letters from all parts of the world promising support and attendance and from present indications the congress will be the greatest yet held by the dental profession.

Dr. H. A. Frederick, of San Francisco, has been elected to fill a vacancy in the Board of Directors and the Committee of Organization, in order to promote the interests of the congress and avoid a repetition of the unpleasant controversies and contests for office which disturbed the organization and opening of the Fourth International Dental Cong-



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ress, has effected a permanent organization with the following officers:

President, Dr. Frank L. Platt, San Francisco, Cal.

Vice-President, Dr. Charles M. Benbrook, Los Angeles, Cal.

Treasurer, Dr. Fred. G. Baird, San Francisco, Cal.

Secretary, Dr. Arthur M. Flood, San Francisco, Cal.

Executive Committee, including the officers named above:

Dr. J. Loran Pease, Oakland, Cal.

Dr. H. G. Chappell, Oakland, Cal.

Dr. R. B. Giffen, Sacramento, Cal.

Dr. A. M. Barker, San Jose, Cal.

Dr. Arthur W. Chance, Portland, Ore.

Dr. G. T. Williams, Seattle, Wash.

Dr. Geo. F. Stiehl, Salt Lake City, Utah.

Dr. B. M. Brookfield, Idaho Falls, Idaho.

Dr. H. H. Wilson, Phoenix, Ariz.

Dr. H. A. Frederick, San Francisco, Cal.

Dr. W. A. L. Knowles, San Francisco, Cal.

Nearly \$13,000 has now been subscribed to the promotion fund, the Southern California Dental Association at its recent meeting having subscribed \$1,000, and its members as individuals, nearly \$1,500 more.

The Pacific Coast States, aside from California, represented on the Board of Directors, are doing their part and the success of the congress, so far as can be judged at the present time, seems positively assured.

State Board of Registration and Examination in Dentistry, State of New Jersey,

Resignation of Dr. Chas. Meeker.

At a special meeting of the State Board of Registration and Examination in Dentistry, held at Newark, N. J., on Saturday, June 14th, the resignation of Dr. Charles A. Meeker as secretary-treasurer was announced, also the retirement of Dr. Meeker from the board on account of ill health, after twenty years of faithful service.

Governor Fielder has appointed Dr. Cornelius Kiel, of Hoboken, N. J., to fill Dr. Meeker's unexpired term. Dr. Alphonso Irwin, of Camden, has been elected secretary-treasurer. Hereafter, all communications concerning the granting of licenses to practice dentistry in the State of New Jersey, should be addressed to Dr. Alphonso Irwin, 425 Cooper Street, Camden, N. J. The office of the New Jersey State Dental Commission is now transferred to Camden.